USING SIMPSON INSTRUCTIONAL MODEL TO IMPROVE VOLLEYBALL SKILL OF UNDERGRADUATE STUDENTS

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ABSTRACT

The objectives of this research were 1) to use Simpson Instructional Model to improve volleyball skills of undergraduate students and 2) to compare students' volleyball skills before and after the implementation based on Simpson Instructional Model. The sample group of the study consisted of 30 freshmen at Chongqing Vocational College of Media in China, through cluster random sampling. The research instruments included 1) lesson plans based on Simpson Instructional Model and 2) volleyball skill achievement test. The assessment questions aim to assess two sub-variables within the dependent variable, including: (1) multiple choice test of concept volleyball knowledge and (2) performance assessment. The data were analyzed by mean, and standard deviation and t-test for dependent sample.

The research result was as follows:

1. Using the Simpson Instructional Model to improve volleyball skill of undergraduate students. The researcher has studied the documents and research related on Simpson Instructional Model and synthesized into 7 steps: 1) Perception, 2) Preparation, 3) Guided response, 4) Mechanism, 5) Complex response, 6) Adaptation, and 7) Creation. The data analysis was assessment of the quality of the lesson plan by 3 experts, and the results are shown the quality of the lesson plan by experts overall, the suitability of the research objectives has the most suitable. After 30 students have learned according to the 3 lesson plans, the results are shown, students' achievement of the volleyball skill the average score after learning was 48.97 which was higher than the average score before learning was 28.70.

2. The comparison of students' volleyball skill before and after using Simpson Instructional Model. The result found overall that students' volleyball skill score after learning higher than before learning statistically significant at the level .01. When considering the results of data analysis: serving skill, spiking skill, and blocking skill. The

result found that students' volleyball skill score after learning higher than before learning statistically significant at the level .01 for all contents. Therefore, Simpson Instructional Model could improve students' volleyball skill.

Keywords: Simpson Instructional Model, Volleyball Skill, Undergraduate Students

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Four years of postgraduate life have passed by like a flash, but the first time I came to Bansomdejchaopraya Rajabhat University was still fresh in my mind. These four years of study have deepened my love for volleyball teaching and further strengthened my determination to pursue a career in volleyball education.

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I wish all teachers, students and friends health and happiness in this blossoming day of spring! Learning is never-ending, and I will also continue to strive in the future of education and write a beautiful life! May we progress together!

Wang Yang

Contents

Contents (Continued)

List of Figures

List of Tables

Chapter 1
Introduction

Rationale

The General Administration of Sport of the People's Republic of China (2023) pointed out in the overall requirements of the "National Fitness Plan (2023)" that sports are an important support for the great rejuvenation of the Chinese nation, and national fitness is the basic sports right of all people, and an important foundation for achieving national strength and people's happiness. As a nationwide popular sport, it is deeply loved by the people of the whole country. Volleyball originated in the United States. In 1895, William G. Morgan invented it in Hollywood, Massachusetts. Around 1900, volleyball was introduced to Canada from the United States. In 1905, volleyball was introduced to countries such as Cuba, Brazil, and China, becoming a popular fashion sport worldwide at that time (Hao Shifeng, 2019). In recent years, due to the increase in the number of volleyball players, the demand for training methods that are both effective and help athletes improve their skills has correspondingly increased. Volleyball course is one of the three major ball courses and also the core course of physical education. But now, the total class hours of volleyball courses have gradually decreased from 72 in the 1970s and 1980s to 48, which is not conducive to improving their teaching quality. According to national policies, the transition from teaching to testing and then to quality education is not easy, and obviously cannot meet the needs of cultivating volleyball professional education talents in the new era. Despite the continuous reduction of class hours, the quality of the curriculum should still be guaranteed, and we must constantly try teaching reform (Huang Xinyun, 2015).

College volleyball courses should be combined with compulsory and elective courses, the class hours and credits can be clearly defined. The teaching goal emphasized skill mastery, the improvement of physical quality, tactical awareness and mental health. The teaching method emphasized the combination of theory and practice, adopted stratified teaching and multimedia teaching. The evaluation system was diversified and paid attention to the process evaluation to ensure the site facilities, improve the level of teachers and encourage curriculum development, such as intramural competitions, inter-school exchanges, etc., in order to comprehensively improve students' volleyball ability (The Ministry of Education of the People's Republic of China, 2023).

Volleyball could comprehensively improve students' physical quality and help to build a healthy body. Lu Yanqi (2019) said Volleyball skill has to ability to master and use speed, strength, skills and teamwork for the outcome of the game. Volleyball skill covered many aspects, from the mastery of basic skills to the flexible use of advanced tactics, and all aspects reflect the comprehensive quality of the players. For example, Volleyball serving skill was the first offensive action in volleyball match, whose quality directly affected the opponent's first attack organization and the defensive layout of the side. Serving technique required players to have good power control, accurate judgment of hitting point and quick reaction ability. Effective serving could destroy the opponent's receiving rhythm, for the side to gain a favorable chance to defend the counterattack. Volleyball spiking skill was the most enjoyable and decisive attack mode in volleyball match, and its power directly determined the outcome of the match. Spiking skill required players to have excellent leaping power, explosive power, swing speed and accurate control of hitting point. Powerful spikes, which could directly score points or force turnovers, are the core of a team's offensive system and volleyball blocking skill was an active means of attack in volleyball defense. Its purpose was to block the opponent's spike, reduce the success rate of the opponent's attack, and create favorable conditions for the back row defense. The blocking skill included take-off timing, hand control and air judgment ability. Effective blocking could put psychological pressure on the other attacker and disrupt its offensive rhythm, which was an important part of the defensive counterattack. At the same time, participating in volleyball games could also relieve learning pressure, promote mental health, and enhance students' self-confidence and anti-pressure ability.

There are significant drawbacks to using traditional teaching methods in the field of sports: learning any sports technique requires a lot of repetitive practice, and the process is very difficult. Liu Jian (2009) pointed out in his article "On the Impact of Classical Learning Theory on the Traditional Teacher Centered Teaching Model" that classical learning theories (i.e. behaviorism and cognitive theory) have a significant impact on traditional teaching models. In classical learning theory, he particularly emphasized that Ausubel's "learning and teaching" theory is still the main theoretical support. In addition, initially, due to factors such as a lack of theoretical knowledge and non-standard motor skills, students quickly lost interest in learning and gradually formed a resistance to practice. In modern competitive volleyball, the competition between attack and defense is one of the biggest highlights of the entire game, but behind this exciting attack and defense, there are countless boring technical exercises.

In volleyball teaching, each of the five basic Skills of passing, padding, dunking, serving, and blocking must be practiced multiple times after learning the movement structure in order to proficiently apply a basic technique. Students' ball sense also needs to be strengthened through continuous practice. Shi Hongyu (2018) proposed that traditional teaching methods emphasize that the main role in the teaching process is that of the teacher. Under the guidance of the teacher, learning is carried out, allowing students to avoid detours and accelerate the learning process. At the same time, they also pay attention to the connection and combination of new and old knowledge and skills, which is economical and timely. Focusing on teachers enables students to easily and directly acquire knowledge and skills from teachers, which is also an experience that educators extract from teaching. It is indispensable in the field of physical education teaching and has matured. Therefore, we cannot easily replace the reform of teaching methods with some new teaching methods. What is more important is to absorb the essence of traditional teaching methods and innovate and improve them.

The teaching method was important for volleyball technique. Simpson Instructional Model (Simpson E.J., (1972) was practical skill that can be developed through practice, it will lead to accuracy, agility, expertise, and durability. Guo Ping (2015) point out the Simpson Instructional Model could greatly promote the development and practice of physical education teaching. It was of great significance for enriching and developing sports teaching evaluation theory, establishing the position of sports education evaluation in various aspects of sports teaching, and promoting sports teaching reform and development. Simpson Instructional Model could stimulate students' thirst for knowledge, provide them with a satisfactory and enjoyable learning experience, and enhance their confidence in physical education learning, truly reflect their subjectivity in physical education teaching. Attempting to combine traditional teaching with the Simpson Instructional Model also avoided the monotonous practice of volleyball classes in physical education majors. This helped teachers stimulate the classroom atmosphere and helped students better immerse themselves in the classroom. To improve teaching effectiveness, Simpson Instructional Model complied with the current policy requirements of classroom reform in universities and provide assistance for improving the quality and effectiveness of volleyball compulsory courses. Consistent with Sun Wenqi (2020) pointed out that the application of Simpson Instructional Model to college volleyball class could bring many influences, including skill learning, physical quality, tactical awareness, learning attitude and team cooperation. Here's a breakdown of those

effects: 1) the influence of skill learning, 2) the impact of physical fitness, 3) the impact of tactical awareness, 4) the influence of learning attitude, and 5) The impact of teamwork. These influences will help students to better master volleyball skills and enjoy the fun brought by volleyball. In addition, Wu Ping (2020) pointed out that Simpson Instructional Model placed students at the center of learning and encouraged students to explore, reflect on themselves and manage themselves. This transformation not only improved students' learning enthusiasm, but also cultivated their independent learning ability, critical thinking and problem-solving ability, and laid a solid foundation for students' lifelong learning. Jiao Siyu (2022) proposed that the Simpson Instructional Model can greatly promote the development and practice of physical education teaching objective evaluation theory, thereby achieving the goal of promoting teaching reform and improving teaching quality. From the perspective of classifying sports action skills, examining and studying sports teaching evaluation provides new ideas for theoretical research and practical operation of school sports teaching evaluation. It is of great significance for enriching and developing sports teaching evaluation theory, establishing the position of sports education evaluation in various aspects of sports teaching, and promoting sports teaching reform and development. The Simpson Instructional Model can stimulate students' thirst for knowledge, provide them with a satisfactory and enjoyable learning experience, and enhance their confidence in physical education learning, truly reflecting their subjectivity in physical education teaching. Attempting to combine traditional teaching with the Simpson Instructional Model also avoids the monotonous practice of volleyball classes in physical education majors, making students realize that improving volleyball skills is a process from quantitative to qualitative change. This helps teachers stimulate the classroom atmosphere and also helps students better immerse themselves in the classroom. In order to improve teaching effectiveness, comply with the current policy requirements of classroom reform in universities, and provide assistance for improving the quality and effectiveness of volleyball compulsory courses in sports majors in the future.

In summary, this research is based on the Simpson Instructional Model can systematically improve students' volleyball skills in stages, since perception, preparation to guided response, to complex explicit behavior and adaptation, ensure that students grasp a solid skill base in the process of gradual progress, and cultivate their ability of independent learning and team cooperation, which is conducive to the volleyball skills development of students.

Objectives(s)

1. To use Simpson Instructional Model to improve volleyball skill of undergraduate students.

2. To compare students' volleyball skill before and after the implementation based on Simpson Instructional Model.

Research Hypothesis

After implementing Simpson Instructional Model, the students' volleyball skill was improved obviously.

Scope of the Research

Population

There were 60 freshmen students, majoring in Physical Education with 2 classes from Chongqing Vocational College of Media, Chongqing city, China, in the second semester of the academic year 2023. (There was mixed ability in each class: high level, medium level and low level.)

The Sample Group

Through a random cluster sampling method, there were 30 freshmen students, majoring in Physical Education with 1 class from Chongqing Vocational College of Media, Chongqing city, China, in the second semester of the academic year 2023.

The Variable

Independent variable: Simpson Instructional Model

Dependent variable: Volleyball skill

Contents

Apply the teaching mode based on Simpson Instructional Model to improve volleyball skill of undergraduate students. This study focuses solely on volleyball skill of freshmen. The course is divided into 3 units, total 27 hours. Which has the following content details:

Unit 1: Volleyball serving skill (9 hours)

Unit 2: Volleyball spiking skill (9 hours)

Unit 3: Volleyball blocking skill (9 hours)

Time

The study period was from July 2023 to August 2024 and was divided into the following stages:

1. In July 2023, three chapters were submitted and defended.

2. In June 2024, modify and complete the teaching plan, relevant tools and experiments based on Simpson Instructional Model.

3. The formal research phase was scheduled for July 2024.

4. In August 2024, the research findings would be summarized, the research thesis would be completed, and the paper will be published.

Advantages

1. For the students: Simpson Instructional Model not only focuses on the improvement of students' motor skills, but also attaches importance to students' psychological development. The process of perceiving the movement, preparing the mind to perform the movement creatively helps students develop psychological qualities such as self-confidence, concentration and creativity. Through systematic skill training, students' physical qualities (such as strength, speed, endurance, etc.) will be significantly improved. At the same time, in teamwork and competition, students' comprehensive qualities (such as communication skills, leadership, team spirit, etc.) will also be cultivated.

2. For the teachers: Simpson Instruction Model emphasizes teaching according to students' individual differences and skill levels, which helps teachers to teach students according to their aptitude and provide students with appropriate learning tasks and challenges for different levels, thereby improving teaching efficiency. Through clear skill classification and stage division, teachers can assess students' learning results more accurately, and give timely feedback and guidance, which helps students correct mistakes and improve skills in time, to improve teaching quality.

3. For the university: Simpson Instructional Model provides a new idea and direction for the reform of school physical education. Universities can learn from this model to promote the innovation and development of physical education curriculum. Through systematic skill classification and phased teaching, schools can focus more equitably on the growth and development of every student, thereby ensuring that every student can improve and progress in physical education.

Definition of Terms

Simpson Instructional Model refers to practical skill that can be developed through practice, it will lead to accuracy, agility, expertise, and durability. The results of behavior or action can be observed from the speed, accuracy, strength, or smoothness of the handling. It's the classification model of motor skills proposed by American scholar E.J. Simpson in 1972. Starting from goal-action-pattern, the psychomotor skill is divided into seven levels from low to high:

Step 1 Perception, the starting point of the learning process, which involved receiving and processing external information through their senses from students. The student's primary task was initial exposure to and perception of the learning material or situation. Through various senses such as vision, hearing and touch, students formed an initial impression and understanding of what they were about to learn and form initial perception and interest in new knowledge.

Step 2 Preparation, after the perception, the students entered the preparation stage. The preparation stage was an important bridge for students to transition from old knowledge to new knowledge. Students needed to review and activate prior knowledge related to what was being studied in order to make connections. In addition to knowledge preparation, psychological preparation was equally important. Teachers encouraged students to think actively, boldly predict the learning path and results, and stimulated their intrinsic learning motivation.

Step 3 Guided response, at this stage, the guiding role of teachers was crucial, through the design of specific activities, to guide students to conduct preliminary exploration and practice of new knowledge. Students actively participated in the learning process through practice, discussion and other ways to deepen the understanding and memory of new knowledge.

Step 4 Mechanism refers to the learned response that has become a habit, when the learner has some confidence in engaging in a certain action and can skillfully make an appropriate response. Through explanation, demonstration, discussion and other ways to help students connect scattered knowledge points and form a systematic knowledge network.

Step 5 Complex response, when the skill has been mastered, students applied their knowledge to more complex and challenging tasks and demonstrated their learning results through practice and an important embodiment of students' ability to improve and carry out automated operations.

Step 6 Adaptation is changing the movement and activity to meet the requirements of the new problem situation. Students to constantly adjust learning strategies and methods based on feedback and evaluation results during the learning process. It was a dynamic, ongoing process designed to help students find the learning path that worked best to adjust their learning strategies and methods based on the feedback results to adapt to the changing learning environment.

Step 7 Creation means the creation of new movements or manipulative materials based on the understanding, abilities and skills developed in the field of motor skills. Which required students to integrate, innovate and create what they had learned.

Volleyball Skill describes a player's ability to master and use speed, strength, skills and teamwork for the outcome of the game. Volleyball skill covered many aspects, from the mastery of basic skills to the flexible use of advanced tactics, and all aspects reflect the comprehensive quality of the players. Volleyball skill consisted of three kinds of ability: 1) volleyball serving skill; 2) volleyball spiking skill; 3) volleyball blocking skill.

Volleyball serving skill was the first offensive action in volleyball match, whose quality directly affected the opponent's first attack organization and the defensive layout of the side. Serving technique required players to have good power control, accurate judgment of hitting point and quick reaction ability. Effective serving could destroy the opponent's receiving rhythm, for the side to gain a favorable chance to defend the counterattack.

Volleyball spiking skill was the most enjoyable and decisive attack mode in volleyball match, and its power directly determined the outcome of the match. Spiking skill required players to have excellent leaping power, explosive power, swing speed and accurate control of hitting point. Powerful spikes, which could directly score points or force turnovers, are the core of a team's offensive system.

Volleyball blocking skill was an active means of attack in volleyball defense. Its purpose was to block the opponent's spike, reduce the success rate of the opponent's attack, and create favorable conditions for the back row defense. The blocking skill included take-off timing, hand control and air judgment ability. Effective blocking could put psychological pressure on the other attacker and disrupt its offensive rhythm, which was an important part of the defensive counterattack.

To sum up, volleyball technical ability was a comprehensive concept, which covered many aspects such as serving, spiking, blocking and teamwork. Only when the athletes have reached a high level in these aspects can they play well in the game and strive for victory for the team.

Research Framework

Using Simpson Instructional Model to Improve Volleyball Skill of Undergraduate students, the researcher studied the concepts and principles of Simpson Instructional Model from many researchers: Huang Xinyun (2015), Shi Hongyu (2018), Hu Haiying (2019), Ma Yingyi (2020), and Zhang Ruifei (2022). This research was synthesized 7 steps to improve volleyball skill of undergraduate students, and defined it as a framework for research concepts, as follows:

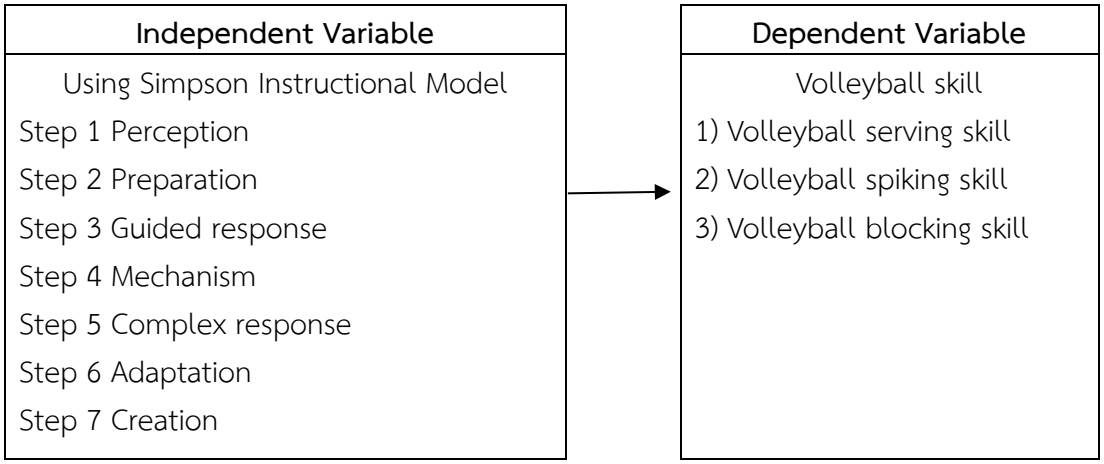

Figure 1.1 Research Framework

Chapter 2
Literature Review

In the research title "Using Simpson Instructional Model to Improve Volleyball Skill of Undergraduate Students", the researcher reviewed relevant documents concerning the following in order to construct the theoretical framework for this research.

1. Simpson Instructional Model
2. Volleyball skill
3. Measurement and evaluation of volleyball skill
4. Related research

Simpson Instructional Model

1. Meaning of Simpson Instructional Model

Simpson Instructional Model categorizes action skill goals, pays attention to learning in complex and meaningful target action skill contexts, enables learners to effectively master the target skill actions, thereby improving learning efficiency.

Mao zhenming (2015) defined Simpson Instructional Model as the action skill in the teaching process. Teachers would closely observe students' practice, offer concrete and constructive feedback in time, help students identify and correct wrong movements, and optimize technical details. At the same time, peer evaluation and self-reflection among students were encouraged to develop the ability of self-assessment and adjustment strategies. This interactive learning process promoted the internalization of knowledge and the deepening of skills, enabled students to manage their own learning process more autonomously.

Huang Xinyun (2015) defined Simpson Instructional Model as follows: The model lied on self-directed learning, empowered students to take ownership of their learning processes. Recognizing the gaps in the motor skills encouraged players to set personalized goals, devise strategies, and engage in the target areas. This shift from passive to active learning, self-driven practice fostered a deeper understanding of players' strengths and weaknesses, thereby nurturing a growth mindset essential for continuous improvement.

Gao Zejin (2017) stated that Simpson Instructional Model used the phased and progressive learning strategy to decompose complex motor skills into several small goals or skill units that were easy to master. At each stage, clear learning

objectives and evaluation criteria were set to ensure that students could improve step by step, and each step was solid. This approach not only reduced the difficulty of learning, but also enhanced students' sense of achievement in learning, enabled them to accumulate confidence in the process of constantly achieving small goals, and then dare to challenge more difficult skills.

Chen Feng (2018) stated that Simpson Instructional Model was characterized by students' self-cognition and growth motivation. By revealing the gap between students' current motor skills and the ideal standard, this model stimulated students' enthusiasm for active learning and exploration. The model advocated a personalized learning path that encouraged students to set their own goals and seek innovative ways to improve skills. This teaching model not only focused on the teaching of skills, but also attached more importance to the cultivation of students' self-oriented ability, innovated problem-solving ability, thereby laying a solid foundation for students' lifelong learning.

Hu Haiying (2019) pointed out that Simpson Instructional Model, an innovative pedagogical framework, offered a distinctive approach to enhance learning outcomes of students, particularly in the realm of motor skill development. By meticulously designing the instructional sessions, this model fostered an environment where learners became acutely aware of the existing disparity between mastered motor abilities and desired standards of motor proficiency. This heightened awareness acted as a catalyst, motivating students to embark on a journey of self-discovery and improvement.

In conclusion, Simpson Instructional Model emphasizes respect for individual differences and adaptive teaching. By recognizing the differences in each student's physical condition, learning ability and interest preferences, teachers will adjust the teaching contents, methods and progress according to the specific situation of students to ensure that each student can effectively learn at their own pace and achieve personalized development. This student-centered teaching concept further enhances the teaching effect, so that every student can make significant progress in the road of motor skills.

2. The Significance of Simpson Instructional Model

The importance of Simpson Instructional Model in teacher training has been emphasized by many scholars and educators.

Mao Zhenming (2015) emphasized that through the teaching method combining situation and actual combat, Simpson Instructional Model made the learning content closer to the reality and enhanced the practicability and application

of learning. By applying the skills learned in a near-real environment, students not only improved their skill level, but also developed the ability to adapt to different situations, and fully prepared for future career development and social life. These simulated scenarios not only covered specific tasks and challenges that students could encounter in the future, but also incorporated complex human interactions and unpredictable elements, enabled students to learn and practice in a near-real environment. In the situational simulation, students were assigned different roles and experienced the challenges in different situations through role-play. This immersive experience offered students a better understanding of how theoretical knowledge could be applied in practice, while also developed their communication skills and teamwork spirit.

Shi Hongyu (2018) stated that by breaking down complex skills into small goals or skill units, Simpson Instructional Model helped students build a solid foundation of skills step by step. Clear objectives and immediate feedback at each stage ensured that the learning process was targeted and effective, enabled students to achieve refined development of skills in a process of continuous iteration and optimization. 1) Refinement of skill decomposition. Firstly, a comprehensive analysis of the target skill was conducted to identify all the key components and sub-skills that made up the skill. This process required educators to have deep expertise and to be able to accurately break down complex skills into small, interconnected, yet independently testable units. Secondly, based on the results of skill decomposition, teachers designed a series of small goals from shallow to deep. Each sub-goal focused on a specific skill point or ability dimension, ensured that learning was targeted and focused. 2) Phased implementation. First, according to the designed small goals, the learning process was divided into several stages, and each stage corresponded to the achievement of a set of small goals. This arrangement helped students to master the basic skills, and then gradually challenged more difficult tasks, formed a step progress. Second, after completing one stage of learning, students were assessed to confirm their mastery before moving on to the next stage of learning. This phased approach helped consolidate learning outcomes and avoided the problem of "biting off more than you can chew."

Wu Ping (2020) pointed out that Simpson Instructional Model placed students at the center of learning and encouraged students to explore, reflect on themselves and manage themselves. This transformation not only improved students' learning enthusiasm, but also cultivated their independent learning ability, critical thinking and problem-solving ability, and laid a solid foundation for students' lifelong

learning. 1) Stimulation of intrinsic motivation. Simpson model stimulated students' intrinsic learning motivation by making them clear about their learning goals and expected results. When students realized that they were active participants in the learning process rather than passive recipients, they would become more engaged in the learning activities and develop a greater interest in what they were learning. 2) The accumulation of sense of accomplishment. By achieving small goals in stages, students were able to increase their self-confidence in the process of gaining a continuous sense of accomplishment, thereby maintaining a continuous passion for learning. Every progress and success were an affirmation of their efforts and further stimulated their enthusiasm for learning.

Sun Wenqi (2020) pointed out that Simpson Instructional Model respected individual differences and implemented adaptive teaching. Teachers adjusted the content, method and pace of instruction according to the specific situation of students, ensured that each student could effectively learn at a pace that suited them. This personalized teaching method helped to discover students' specialty and promoted students' all-round development and personal growth. 1) Deeply identify individual differences. Simpson Instructional Model adopted diversified assessment means, not only paid attention to students' academic performance, but also attached importance to their interest, ability, learning attitude and other aspects of performance. Through continuous observation, recording and communication, teachers could fully and accurately identify the individual differences of each student, and establish a personalized learning file for each student to record their learning process, achievements, challenges and growth trajectory. 2) Customization of adaptive teaching content. Teachers designed differentiated course content according to students' learning abilities and interests. For students with weak foundation, teachers provided necessary supplementary materials and guidance; For students who had the ability to learn, teachers would provide further development of learning opportunities. When teaching the same skill or knowledge point, the difficulty and depth of the teaching content could be flexibly adjusted according to the learning progress and understanding ability of the students, so as to ensure that each student could be challenged and improved at their own level.

Ma Yingyi (2022) pointed out that Simpson Instructional Model encouraged interactive communication between teachers and students. This kind of interaction not only helped to give feedback timely and adjust teaching strategies, but also cultivate students' cooperative spirit, communication ability and social skills. In the process of cooperative learning, students learned from each other and made progress

together, thereby forming a positive learning atmosphere. Simpson Instructional Model encouraged teachers to be active listeners, paid attention to students' learning status and needs, and gave timely personalized feedback. This kind of feedback was not only a right or wrong judgment, but also included the affirmation and guidance of students' thinking process and problem-solving methods, so as to stimulate students' intrinsic motivation and learning interest. Teachers designed open questions, guided students to think deeply and explored actively. Teachers designed questions, discussions and other ways to stimulate students' curiosity and thirst for knowledge, promote the collision of ideas and exchange of views between students and teachers. Teachers also paid attention to the emotional state of their students and build relationships of trust and respect with students, thereby fostered a welcoming and supportive learning environment by caring for students' personal growth and encouraging their efforts and progress.

To sum up, the main significance of Simpson Instructional Model is that it can stimulate students' inner motivation, promote the refined, practical and personalized development of skills, and enhance the interaction and cooperation of teaching to provide strong support for students' all-round development.

3. The Elements of Simpson Instructional Model

Simpson Instructional Model is a step-by-step method designed to guide students from perception to creation through a series of carefully designed steps to fully grasp knowledge and develop their thinking skills. Simpson Instructional Model includes the following components:

Huang Xinyun (2015) pointed out that the seven steps of Simpson Instructional Model included:

Step 1: Perception

At this stage, the student's primary task was initial exposure and perception of the learning material or situation. Through sensory input, such as observation, listening, reading, etc., students formed an initial impression and understanding of what they were about to learn.

Step 2: Preparation

After the perception, the students entered the preparation stage. The goal of this stage was to activate students' prior knowledge, establish connections between old and new knowledge, and prepare them psychologically and intellectually for the upcoming learning activities.

Step 3: Guided response

Under the guidance of teachers, students engaged in a series of specific and limited activities to explore and practice new knowledge. This stage was designed to promote active learning and deepen the understanding and retention of new knowledge.

Step 4: Mechanism

In this stage, the internal logic and mechanism of the learning content were deeply analyzed to help students understand the principles and laws behind the knowledge and form a systematic knowledge structure.

Step 5: Complex response

On the basis of mastering basic knowledge and skills, students were required to face more complex and challenging learning tasks, which could be completed independently or cooperatively to demonstrate their learning results.

Step 6: Adaptation

Students needed to constantly adjust their learning strategies and methods based on feedback and evaluation results during the learning process to adapt to the changing learning environment and task requirements.

Step 7: Creation

This was the highest stage of learning, where students were able to integrate their knowledge, innovate and create, and generate new ideas, works or solutions.

Shi Hongyu (2018) paid attention to the seven important aspects of Simpson Instructional Model:

Step 1: Awareness. The primary task of students was to embark on a journey of exploration. Through various senses such as vision, hearing and touch, students could initially contact and perceive the learning materials or situations, and form initial perception and interest in new knowledge.

Step 2: Preparation. Students entered the preparation stage. The core of this stage was to activate students' existing knowledge system, build a bridge between old and new knowledge, build a solid psychological and knowledge foundation for subsequent learning, and ensure that students were in the best state to welcome the learning of new knowledge.

Step 3: Instructed reaction. Under the careful guidance of teachers, students actively participated in a series of carefully designed and targeted learning activities. Through hands-on operation, thinking and discussion, students tried to apply new knowledge, promote the internalization and understanding of knowledge, and cultivate the habit of active learning.

Step 4: Understanding the fundamentals. This stage focused on in-depth analysis of the essence and core of learning content, and revealed the logical chain and operating mechanism behind knowledge. Through case analysis, explanation and other methods, students could build a systematic knowledge framework and deepen their understanding of the inherent laws of knowledge.

Step 5: Complex reaction. On the basis of mastering basic knowledge and skills, students would face the challenges on higher level learning. These challenges might come in the form of complex projects, practical problems, or advanced exercises that required students to integrate their knowledge and demonstrate their learning outcomes and abilities through independent thinking or teamwork.

Step 6: Adjustment. During the learning process, students should constantly review their progress and effectiveness based on feedback and evaluation results. Through self-reflection and teacher guidance, students learned to adjust learning strategies and optimize learning methods to adapt to the deepening of learning content and the change of learning environment.

Step 7: Innovation. As the final stage of learning, students in this stage would be able to integrate what they had learned, dare to explore unknown areas, and carry out creative thinking and practice. They might come up with new ideas, design original works, develop innovative solutions, etc., in order to demonstrate their creativity and innovation ability, and lay a solid foundation for future development.

Hu Haiying (2019) mentioned that the seven important aspects of Simpson Instructional Model were interrelated, which together constituted a complete teaching system. These seven areas were as follows:

Step 1: Cognizance. Teachers needed to create an engaging learning environment and use a variety of media and teaching methods to stimulate students' learning interest and curiosity. By showing objects, playing videos, telling stories or demonstrating experiments, students could intuitively feel the charm of learning content and lay a good foundation for subsequent learning.

Step 2: Preparation. Teachers could help students review prior knowledge related to the current learning content by asking questions, discussing or reviewing old knowledge. At the same time, it guided students to think about new problems, predict learning results, and stimulate their thirst for knowledge and exploration. Teachers also needed to define learning objectives so that students were clear about what they were going to learn and achieve.

Step 3: Managed response. Teachers would design a series of targeted exercises, experiments or activities to allow students to experience the application of new knowledge in practice. Through the teacher's guidance and demonstration, students gradually mastered the basic skills and methods of new knowledge. At the same time, teachers encouraged students to ask questions and share feelings in order to find and solve the confusion in learning in time.

Step 4: Mechanism. Teachers would use explanations, demonstrations, discussions and other ways to deeply analyze the internal structure and operation mechanism of learning contents. By guiding students to analyze cases, teachers summarized rules, established models and help students understand the internal connection and causality between knowledge. At the same time, teachers would also emphasize the application and practicality of knowledge, so that students could understand the value and significance of what they had learned in real life or professional fields.

Step 5: Complex reaction. Teachers would design a series of comprehensive learning tasks or projects, require students to use their knowledge to solve practical problems or complete specific tasks. These tasks might involve knowledge and skills in multiple subject areas. By completing these tasks, students were not only able to consolidate and deepen their knowledge, but also develop their innovative thinking, critical thinking and practical skills.

Step 6: Adaptive adjustment. Teachers needed to pay attention to students' learning progress and performance and offer timely feedback and guidance. Through individual tutoring, group discussion or collective feedback, teachers help students find the problems and shortcomings in learning, and provide corresponding suggestions for improvement. At the same time, teachers also needed to encourage students to conduct self-reflection and assessment and cultivate their independent learning ability and lifelong learning awareness. Students needed to gradually find their own learning paths and methods through continuous trial, error and adjustment.

Step 7: Creation. Teachers would encourage students to use their imagination and creativity, apply what they had learned to new situations or problems, and create new works or solutions with uniqueness and value. Learning activities at this stage might include creative writing, designing projects, and technological inventions. Through creative activities, students could not only show their learning achievements and talents, but also cultivate their comprehensive qualities such as innovative thinking, teamwork and social responsibility. At this stage, the teacher's primary role was as a facilitator and supporter, providing students with

the necessary resources and guidance to stimulate their creative potential and enthusiasm.

Ma Yingyi (2022) stated that Simpson Instructional Model was a teaching method aimed at training teachers to practice and reflect on their teaching skills by simulating a real class environment.

Step 1: Perception. Teachers needed to build an attractive learning sailing station, use rich multimedia resources and innovative teaching methods, and ignite students' curiosity and desire to explore the unknown world. Through vivid demonstrations, engaging storytelling, or intuitive experimental presentations, students were guided into the ocean of knowledge, thereby laying a solid foundation of interest for further exploration.

Step 2: Readiness. Teachers skillfully used question guidance, thinking collision or knowledge context sorting to help students consolidate the previous knowledge closely linked to the content of the new lesson. Teachers encouraged students to think actively, boldly predict the learning path and results, and stimulated their intrinsic learning motivation. At the same time, clear learning objectives, so that students had a picture in mind and were familiar with the direction of the learning journey.

Step 3: Directed response. Teachers carefully designed a series of practical activities, so that students could operate, experience, and feel the practical application of new knowledge. Through careful guidance and demonstration, students gradually mastered the essence of new skills, found and asked questions in practice. Teachers encouraged students to communicate openly, shared learning experience, solved doubts together, and promoted the internalization and absorption of knowledge.

Step 4: In-depth understanding. Teachers adopted multi-dimensional teaching strategies, such as in-depth explanation, case analysis, rule summary and model construction, to lead students to dig deeper into the essence and internal logic of the learning content. Through this series of processes, students could not only understand the interrelationship between knowledge, but also insighted into the deep principles behind it, and enhanced the overall grasp of knowledge.

Step 5: Comprehensive response. Teachers designed a series of interdisciplinary and comprehensive learning tasks or projects, required students to flexibly use their knowledge to solve complex problems or complete specific tasks. These tasks aimed to train students' comprehensive analysis ability, innovated thinking ability and teamwork ability. By working together, students not only

consolidated what they had learned, but also improved themselves in the process of solving practical problems.

Step 6: Comprehensive adaptation. Teachers became the navigators of students' learning journey and paid close attention to each student's growth trajectory and learning effectiveness. Through personalized tutoring, group mutual assistance and collective feedback, we helped students identify the shortcomings and bottlenecks in learning, and provided targeted suggestions for improvement. At the same time, students were encouraged to carry out profound self-reflection and assessment and cultivated their independent learning ability and lifelong learning habit. In the continuous trial and error and adjustment, students gradually found the most suitable for their own learning rhythm and method.

Step 7: Invention. Teachers stimulated students' infinite creativity and potential, encouraged them to integrate what they had learned into novel situations or problems, and created unique works or solutions with practical application value. The learning activities in this stage were rich and colorful, covered with creative writing, innovative design, scientific and technological research and development and other fields. In the process of creation, students not only showed their individual talent and wisdom, but also cultivated comprehensive qualities such as social responsibility and leadership in team cooperation. Teachers acted as supporters and guides, provided students with the necessary resources and support to help them make the leap to their dreams.

Zhang Ruifei (2022) stated that Simpson Instructional Method was a kind of teaching method for the purpose of teacher training, which was usually used to cultivate and improve teachers' teaching skills. Simpson Instructional Method consisted of the following seven main components:

Step 1: Perception, perception was the starting point of the learning process, which involved receiving and processing external information through their senses from students. This stage was not limited to simple data collection, but also included the initial processing and understanding of the information, laid the foundation for subsequent in-depth learning.

Step 2: Preparation, the preparation stage was an important bridge for students to transition from old knowledge to new knowledge. It emphasized the activation of students' existing knowledge system and provided the necessary background and support for the learning of new knowledge.

Step 3: Instructed reaction, students began to move from passively receiving information to actively participating in the learning process. The guiding role of teachers was crucial, through the design of specific activities to guide students to conduct preliminary exploration and practice of new knowledge.

Step 4: Mechanism, the mechanism stage in-depth analysis of the internal logic and principles of learning content, helped students understand the deep relationship behind knowledge, so as to build a systematic knowledge structure.

Step 5: Complex response, this stage emphasized that students applied their knowledge to more complex and challenging tasks and demonstrated their learning results through practice. This was not only the consolidation and deepening of knowledge, but also an important embodiment of students' ability to improve.

Step 6: Adaptation, the adaptation phase required students to constantly adjust learning strategies and methods based on feedback and evaluation results during the learning process. It was a dynamic, ongoing process designed to help students find the learning path that worked best for them.

Step 7: Creative, creativity was the highest stage of learning, which required students to integrate what they had learned, to innovate and create. This was the ultimate test of students' comprehensive ability, and also the concentrated embodiment of their innovative spirit and creativity.

In conclusion, Simpson instructional model had significant advantages in the teaching of motor skills, which could provide teachers and students with clear teaching objectives, clear learning paths and effective teaching methods, and promoted the overall development of students and the improvement of innovative ability.

Table 2.1 The synthesis of Simpson Instructional Model

Author	Simpson Instructional Model (1972)	Huang Xinyun (2015)	Shi Hongyu (2018)	Hu Haiying (2019)	Ma Yingyi (2022)	Zhang Ruifei (2022)	In this research detail
Step 1	Perception	Perception	Awareness	Cognizance	Perception	Perception	Perception
Step 2	Preparation	Preparation	Preparation	Preparation	Readiness	Preparation	Preparation
Step 3	Guided response	Guided response	Instructed reaction	Managed response	Directed response	Instructed reaction	Guided response
Step 4	Mechanism	Mechanism	Understanding the fundamentals	Mechanism	In-depth understanding	Mechanism	Mechanism
Step 5	Complex response	Complex response	Complex reaction	Complex reaction	Comprehensive response	Complex response	Complex response
Step 6	Adaptation	Adaptation	Adjustment	Adaptive adjustment	Comprehensive adaption	Adaptation	Adaptation
Step 7	Creation	Creation	Innovation	Creation	Invention	Creative	Creation

Form the Table 2.1, the influence of Simpson Instructional Model on volleyball skill was mainly reflected in the aspects of skill decomposition and refinement, improvement of learning effect, timely feedback and adjustment, and establishment of correct technical action concept. These influences were helpful for students to better master and use volleyball skills and improve their volleyball level. The researcher studied the documents and related research about Simpson Instructional Model from many researchers: Huang Xinyun (2015), Shi Hongyu (2018), Hu Haiying (2019), Ma Yingyi (2020), and Zhang Ruifei (2022) and synthesized 7 steps to develop lesson plans: Step 1 Perception, Step 2 Preparation, Step 3 Guided response, Step 4 Mechanism, Step 5 Complex response, Step 6 Adaptation, and Step 7 Creation. The following reasons:

Step 1: Perception, the starting point of the learning process, which involved receiving and processing external information through their senses from students. The student's primary task was initial exposure to and perception of the learning material or situation. Through various senses such as vision, hearing and touch, students formed an initial impression and understanding of what they were about to learn and form initial perception and interest in new knowledge. It was unified from the first step of Huang Xinyun (2015), Shi Hongyu (2018), Hu Haiying (2019), Ma Yingyi (2020), and Zhang Ruifei (2022).

Step 2: Preparation, after the perception, the students entered the preparation stage. The preparation stage was an important bridge for students to transition from old knowledge to new knowledge. The set stage was an important bridge for students to transition from old knowledge to new knowledge. It emphasized the activation of students' existing knowledge system and provided the necessary background and support for the learning of new knowledge. Students needed to review and activate prior knowledge related to what was being studied in order to make connections. In addition to knowledge preparation, psychological preparation was equally important. Teachers encouraged students to think actively, boldly predict the learning path and results, and stimulated their intrinsic learning motivation. Which involved the adjustment of students' learning attitude, motivation and expectation. It was unified from the second step of Huang Xinyun (2015), Shi Hongyu (2018), Hu Haiying (2019), and Zhang Ruifei (2022).

Step 3: Guided response, at this stage, the guiding role of teachers was crucial, through the design of specific activities, to guide students to conduct preliminary exploration and practice of new knowledge. Teachers needed to carefully design teaching activities to ensure that the activities were targeted, challenging and

interesting. In the activities, students actively participated in the learning process through practice, discussion and other ways to deepen the understanding and memory of new knowledge. It was unified from the third step of Huang Xinyun (2015), Shi Hongyu (2018), Hu Haiying (2019), Ma Yingyi (2020), and Zhang Ruifei (2022).

Step 4: Mechanism

Mechanism stage meant in-depth analysis of the internal logic and principles of learning content, helped students understand the deep relationship behind knowledge, so as to build a systematic knowledge structure. Through explanation, demonstration, discussion and other ways, the internal logic and operation mechanism of the learning content were deeply analyzed to help students connect scattered knowledge points and form a systematic knowledge network. It was unified from the fourth step of Huang Xinyun (2015), Hu Haiying (2019), and Zhang Ruifei (2022).

Step 5: Complex response

This stage emphasized that students applied their knowledge to more complex and challenging tasks and demonstrated their learning results through practice. This was not only the consolidation and deepening of knowledge, but also an important embodiment of students' ability to improve. Teachers designed challenging learning tasks that required students to integrate their knowledge to solve problems. Students worked independently or collaboratively to complete tasks and test learning effectiveness by demonstrating results. It was unified from the fifth step of Huang Xinyun (2015), Shi Hongyu (2018), Hu Haiying (2019), and Zhang Ruifei (2022).

Step 6: Adaptation

Teachers required students to constantly adjust learning strategies and methods based on feedback and evaluation results during the learning process. It was a dynamic, ongoing process designed to help students find the learning path that worked best for them. Students adjusted their learning strategies and methods based on the feedback results to adapt to the changing learning environment and task requirements. It was unified from the sixth step of Huang Xinyun (2015), Shi Hongyu (2018), Hu Haiying (2019), Ma Yingyi (2020), and Zhang Ruifei (2022).

Step 7: Creation

Creativity was the highest stage of learning, which required students to integrate, innovate and create what they had learned. This was not only the ultimate test of students' comprehensive ability, but also the concentrated embodiment of their innovative spirit and creativity. Students needed to integrate and reconstruct what they had learned to form their own unique insights and knowledge system. It

was unified from the seventh step of Huang Xinyun (2015), Shi Hongyu (2018), Hu Haiying (2019), Ma Yingyi (2020), and Zhang Ruifei (2022).

Volleyball Skill

1. The Meaning of Volleyball Skill

Volleyball skill refers to the sum of all the skills and abilities that players needed to master and use in volleyball match. These skills and abilities covered a number of aspects from volleyball serving skill, volleyball spiking skill, volleyball blocking skill to advanced strategic awareness, which was the key for players to gain an advantage on the court and improve the overall strength of the volleyball team.

Zhai Xinxin (2017) pointed out that volleyball technology, as the core component of volleyball, was the use of arms, wrists, fingers and the whole body-coordination in the game, through a series of exquisite skills and methods to control the height, direction, speed and landing point of the ball, so as to implement effective attack and solid defense of the technical system. Volleyball skill not only required players to have excellent personal skills and physical qualities, but also emphasized the tacit cooperation between teams and tactical execution. In the game, the players needed to work closely together and flexibly use various technical movements in order to win the game according to the situation on the field and the characteristics of the opponent.

Chen Bingdong (2020) pointed out that volleyball technology referred to the use of arms, wrists, fingers and body coordination in the game, through a series of basic skills, such as serving, cushion, passing, spiking, blocking and defense, in order to control the height, direction, speed, landing point of the ball and implement effective attack and defense, thereby winning the game a series of skills and methods.

Cheng Huo (2022) stated that volleyball was a sport full of strategy, skill and teamwork spirit. It was not only a contest of strength and speed, but also a display of wisdom and tacit understanding. On the volleyball court, the players weaved together an exciting game through accurate serving, stable padding, clever passing, powerful spiking, and indestructible blocking and defense. This sport not only tested the technical level and physical fitness of the players, but also emphasized the tacit cooperation and tactical execution between the teams, so that the participants gained happiness in sweat and grew together in challenges.

Xu Mengjiao (2024) viewed that volleyball technology, as a highly collaborative and skillful sport, required players to accurately use the delicate touch of the arm, wrist and fingers, as well as the coordinated movement of the whole body, to perform a series of complex and fine basic skills in a competitive game. From the beginning of the game, players needed to use the right strength and angle and strived to directly score or disrupt the opponent's rhythm. Then, players needed to react quickly to create opportunities for follow-up attacks with a stable rhythm.

In sum, volleyball skill referred to the comprehensive ability of volleyball players to complete or participate in the team's offensive and defensive tasks independently by using various technical movements and methods in the game.

2. The Importance of Volleyball Skill

The volleyball skill occupies a crucial position in the whole basketball game. It’s not only affects the performance and score of the players on the court, but more importantly, it enhances the personal growth and team cooperation ability of the players.

Tang Yunqi (2013) emphasized that the importance of volleyball skill was not only related to the process and result of the game, but also helped players to realize their tactical intention and show their competitive level on the field. Superb technology could not only improve individual performance, but also a magic weapon for team cooperation and victory, which played an irreplaceable role in promoting the development and progress of volleyball.

Zhou Yufeng (2014) explored that volleyball skill was not only the display of the player's individual ability, but also the key factor that determined the outcome of the game. Superb technology could ensure that players made accurate and effective actions at both ends of the offensive and defensive to improve the team's offensive efficiency, consolidate the defensive system, and occupied an advantage in the fierce game.

Zhao Meixia (2016) emphasized that volleyball skill lied in multi-dimensional shaping of the pattern and direction in the game. The accuracy of serving was like the nerve center of the team, for it accurately connected each attack to creating winning opportunities. The power of the spike was like a sword out of the sheath, for it hit the opponent's key point, shew the team's strong offensive firepower. At the same time, the deterrent of blocking could not be ignored, for it was not only a solid barrier of defense, but also the key to boost the morale of the whole team. Defensive collaboration was the cornerstone of the construction of this line of defense, and team understanding could reduce the loss of points. In addition, the mobile agility of

the players ensured a flexible response and quick replacement on the field. However, volleyball skill was not limited to physical skills, while the strength of psychological pressure resistance was also critical. At the critical moment of the game, good psychological quality could help players withstand the pressure and make correct judgments, so as to determine the outcome of the game.

Tian Yonggang (2021) stated that volleyball skill was not only a way for players to show their individual talent and strength on the court, but also a key means to achieve teamwork, tactical execution and game victory. Through continuous improvement and integration of various techniques, players could exert their maximum effectiveness at both ends of the attack and defense, contribute to the team's winning the game, and promote the inheritance and development of volleyball skills.

Liu Yanchen & Li Peng (2024) pointed out that volleyball, as a collection of team cooperation, skill challenge and psychological quality exercised in one of the sports, promoted physical health, improved sports ability, but also cultivated the participants' team spirit, strategic thinking and anti-pressure ability, which was conducive to the overall development of individuals and the enhancement of social adaptability. At the same time, volleyball also promoted international exchanges and cooperation, deepened the understanding and respect of different cultural backgrounds, and became an important link to connect the world.

In conclusion, the enhancement of volleyball skill held profound implications for players. It not only aided in securing superior outcomes on the court, but also fostered players' holistic growth and elevated their overall abilities. Hence, it was paramount for volleyball athletes to relentlessly hone their skills and strive for continuous improvement.

3. The Volleyball Skill Course

This article focused on volleyball serving skill, volleyball spiking skill and volleyball blocking skill. Through explaining the content of these three dimensions, the influence of Simpson Instructional Model on volleyball technical ability is analyzed.

3.1 Volleyball Serving

Serving is a very important technique, which directly affects the outcome of the whole game. Therefore, in the preparation stage, teachers should carefully analyze the purpose, significance and tactical requirements of the game, and do a good job in serving skills training and psychological preparation.

The principles of serving skill are as follows:

1. Teachers should have correct movement techniques: (1) Stand naturally and comfortably; (2) The movements of arm should be coordinated correctly; (3) The grip should be reasonable; (4) Throw the ball correctly.

2. Serving skills should be comprehensive. In the serving area, the following points must be achieved: (1) The ball should be placed properly; (2) When serving, players should stand in front of feet, arms droop naturally, body weight is placed between feet, and eyes are on the ball; (3) The throwing position should be appropriate; (4) When throwing the ball, the arm should be consistent with the hitting position and body center of gravity.

3. Serve must have a good rhythm. When serving, players should master the time and rhythm to make the serving more continuous and changeable. Generally speaking, the tee is long, fast-paced and varied.

4. Have a strong sense of attack when serving, mobilize opponents through serving, and strive for initiative.

In the competition, according to different competition requirements, the serving skill is different. According to the principles and methods of serving, serving skill can be divided into the following types:

1. Jump serving: When serving, turn back and down with a hand or wrist, and then swing up to make the ball fly from high to low.

2. Throwing methods: When serving, put the ball in a hand first, and then throw the ball from top to bottom in order to strengthen the rotation and strength, and the height of the ball is generally higher than the normal ball.

3. Friction serving: When serving, rub the ball with a small area of fingers and palms.

4. Throw-serving combination: Throw the ball into the air with the coordinated force of forearm, wrist and finger, and control the ball with finger, palm and forearm.

5. The combination of jump serving: Firstly, the combination of jump serve and friction serve. Secondly, the serving is received by a combination of jump serving and friction serving. Thirdly, the combination of jump serve and friction serve is used to pass and defend one after another. Fourthly, use jump serve and friction serve to receive the serve; Fifthly, the serving is received by a combination of jump serving and friction serving.

The common methods of volleyball serving skill are as follows:

1. Drift serving: Straight serving is one of the most common serving techniques. The main purpose of a player's serving is to make the ball pass through the opponent's receiving lineup in a straight line, which makes it difficult for the receiver to judge the landing point and direction of the ball. The characteristics of straight serve are that the rotation of the ball is small, the flight trajectory is relatively stable, and it is difficult for the opponent to catch the ball.

2. Topspin serving: Topspin is a powerful serve technique. When serving, the player makes the ball fly along an arc by hitting and spinning. The feature of topspin serving is that the ball will appear a downward curve after a period of time, which increases the difficulty of receiving the serving. This serving technique requires the players to have good strength and skills and can accurately control the rotation and flight trajectory of the ball.

3. Jump serving: Slant serve is a serving technique that requires high strength and skill. When serving, athletes take off to offer the ball greater speed and curve through strength and rotation, thereby making the ball fly diagonally. Oblique serve is characterized by fast ball speed and large flight trajectory curve, which makes it difficult for opponents to receive the serve. This serving technique requires players to have good explosive power and skills and can accurately control the rotation and direction of the ball.

4. Jumping and drifting: Fast throwing is a variable-speed serving technique. When serving, the player throws the ball to make it fly faster, but rotate less. Fast throwing is characterized by high speed and less rotation, which makes it more difficult for opponents to catch the ball. This serving technique requires players to have faster arm speed and accurate ball-controlling ability.

3.2 Volleyball Spiking

Spiking is a skill that requires teamwork. The success of spiking is inseparable from the tacit cooperation between passing and passing. The initiator of the spike needs to accurately judge the position and quality of the pass, while the target receiver of the spike needs to accurately understand and grasp the intention and strength of the spike. Through spiking training and competition, teamwork ability and tacit understanding can be enhanced.

The preparation postures of volleyball spiking skill are as follows:

1. Preparation posture: Before spiking, players should take appropriate preparation posture. Feet are shoulder-width apart and slightly bent to maintain balance and stability. Keep hands in front of the body to catch and smash.

2. Keep arms straight and palms open. Players should touch the ball with the palms and fingertips of hands and use the strength and skills of hands to give the ball rotation and strength.

3. When the spiker is ready to take off, the feet should be about shoulder width, left foot is in front, right foot is behind, and the heel is slightly raised. Lift arms to the side, straighten left arm, bend right arm 90, and place it at one side. Turn upper body slightly to the left and lean forward about 45. Knees slightly bent.

4. When preparing posture, all parts of the body should have a large range of activities and full extension. The weight of the whole body is transferred to the left foot, the upper body turns left and leans forward slightly, and the left foot stretches forward slightly.

5. After kicking legs, turn hips quickly, tilt upper body backward to the left, and swing arms back and forth quickly. At the same time, the center of gravity moves forward to the right foot and turns right, and the arms are lifted forward and left from the back.

6. The key to preparing posture is to appropriately increase the upper body to lean forward. Only in the correct preparation position, can spiking play the best hitting effect.

The following points should also be noted in the preparation posture:

1. Don't move into position before spiking.

2. When taking off, the strength of legs should be enough to increase the jumping height.

After taking off, players should push the ground quickly and turn around to rotate body to the maximum and fully extend it to increase the jumping height.

Volleyball spiking skill is divided into 6 parts:

1) Take-off in situ

Taking-off in situ is the basic technique of spike. After preparing for posture and running-up, athletes will naturally open their arms, keep their eyes on the front, put their feet together or touch the ground with their front feet. During the run-up, the right foot first lands on the ground in front of the sole of the foot, and the toes slightly turn outwards; Then push the heel to the ground and lift the front foot off the ground. When hitting the ball, the forefoot is slightly buckled inward, and the knee is slightly bent.

There are two basic ways to take-off in place: one is to take off from the back to the front; The other is to jump forward from the side. According to the distance, strength, speed of spike and the physical quality of athletes, take-off in situ can be divided into side take-off and back take-off.

2) Side take-off: The take-off of athletes from back to front mainly includes:

(1) Rotate backward by 45 or 60;

(2) Turn from front to top, lift \ legs and take off with hind feet;

(3) The supporting method is the same as the side take-off. The main points of the two take-off techniques are to keep the body upright, open arms naturally, rotate forearms inward and bend elbows.

3) Run-up and take-off

Run-up take-off is the most important link in spike technique. Run-up take-off technology includes three links: run-up take-off, accelerating take-off and landing take-off. Among them, accelerating take-off is the key of spike technique and plays a very important role in spike. The correctness of the catch not only affects the spike technique, but also has an important influence on improving the success rate and speed of spike.

(1) Run-up distance and speed: Athletes should give full play to their physical fitness and have enough strength and speed to complete the whole run-up process. In training, athletes' run-up distance is generally required to be 50-100 meters, and the speed is 20-30 meters per second. In the competition, because of the different technical and tactical levels of athletes from both sides, they often use different run-up distances and speeds.

(2) Acceleration method: When athletes smash and take off, they generally adopt two methods: linear acceleration method and arc acceleration method.

4) Hitting in the air is a technique of hitting the ball to the opponent's court in the air, which mainly includes spiking and receiving spiking.

(1) Spike: When there is a block, when the opposing blocking team is ready to take off and block, the player should quickly determine the landing point of the ball and take different take-off methods to throw the ball from the air.

(2) One-handed spike: When the opponent does not block the net, the player can use one-handed spike, two-handed spike, take-off spike, run-up spike and other methods to catch the ball.

(3) Run-up and take-off spike: After the athlete completes the run-up and take-off in the air, the player directly hits the ball in the air.

5) When the spike hits the ground, if the take-off is not timely or not high, the body posture should be adjusted in time to lower the center of gravity and the height of the center of gravity to reduce the impact of the body. If the take-off height is low after take-off, players should use the movement of arms and shoulders to increase the swing amplitude, or use the rotation movement to drive the movement of arms and shoulders to increase the swing amplitude. When smashing a long-distance ball, try to buffer the hitting action before landing. When taking close shots, keep weight between feet and keep upper body straight or turn right slightly. When hitting the ground, try not to use the landing technique of waist and leg strength. The force sequence of spiking landing is knee joint-thigh-back-shoulder joint-elbow joint. Use the strength of abdomen, shoulders, waist, legs and hands to cushion the ball. When landing, pay attention to:

(1) Cushioning: Cushioning the impact force when landing is the key to the long-range ball.

(2) Take-off: After take-off, the weight of the body falls between the feet.

5) Peak line

Spike route refers to the route used by athletes when they smash, and it is an important part of spike technology. It directly affects the success rate of spike, and then affects the offensive effect. There are generally three kinds of spike lines: firstly, move from the front of the net to both sides, and then from one side to the other; Secondly, move in two directions from the front of the network, and then move from one side to the other; Thirdly, move from the front end of the network to the middle.

6) Landing

When landing, the arms naturally swing to the sides of the body before landing to move the center of gravity forward. When landing, the adjustment action is that the feet are parallel to the shoulder width, the center of gravity of the body moves from between the feet to the soles of the feet, and the feet land on the ground. At the moment of take-off, due to the forward swing of arms and the forward movement of body center of gravity, the body is in a state of flight. If the landing action is not adjusted in time, it will have a certain impact on the subsequent takeoff. When landing, pay attention to the slight flexion of knees, swing arms back and forth, and touch the ground with fingertips. When stepping on the ground in the air after flying, the arms swing rapidly with the forward flight of the body, and the hands are quickly separated to the sides. When landing, players should first land with the forefoot of left foot or the forefoot of right foot, and lift arms with the waist. Landing

can be faster when in the air for a long time after take-off. If the landing action is not adjusted in time, it will affect the completion of the follow-up action.

In order to improve the success rate and effect of spike, spike athletes should pay attention to the following points in the competition:

(1) Decisive take-off;

(2) When taking off, feet naturally open to shoulder width;

(3) The weight of the body moves forward after take-off.

Teachers can make students feel the tension and intensity of volleyball match by simulating the match and watching the video of the match, and stimulate their interest in learning. Coaches need to design suitable training scenes according to athletes' technical level and training objectives. For example, a standard volleyball court with a length of 1.8 meters and a width of 2 meters is set indoors. The two rows of chairs are 1.5 meters apart. There are five balls in each corner, two of which are volleyball. There are six chairs on the field, and there is a 1.2m wide runway between the chairs. At the beginning of the volleyball match, the referee and the referee sat in the chairs in the first row, and two players stood on both sides of the playing field. The referee can pass the ball and serve to the first-row players by hand, or start with gestures. The two players who practice spiking practice according to the requirements of the referee to simulate the pressure in the game and create various spiking environments, such as different heights and speeds. By creating diverse scenes, athletes can adapt to different competition conditions and improve their ability to cope with complex situations.

3.3 Volleyball Blocking

Blocking is one of the most important defensive methods in volleyball match. An accurate and powerful block can effectively block the opponent's attack and reduce the opponent's chances of scoring. The accuracy and height of blocking directly affect the bounce and path of the ball and determine whether the ball can be stopped successfully. The rhythm of the game can be controlled by the strength and accuracy of blocking. A successful block can force an opponent to adjust offensive strategy and even interfere with offensive rhythm. The strength and accuracy of blocking can quickly change the situation of the game and gain an advantage for one side. Blocking can effectively block the opponent's offensive ball and reduce the opponent's chances of scoring. Powerful blocking can not only block the opponent's offensive ball, but also put pressure and trouble on the opponent and reduce the opponent's offensive effect. A successful block can inspire the morale and confidence of the whole team. A successful block can not

only win points for the team, but also boost the team's morale and increase the team's confidence and fighting spirit. Blocking is a technique that requires teamwork. The success of blocking is inseparable from the cooperation and support of teammates. Through good communication and tacit understanding, team members need to cooperate to complete the blocking action, so as to maximize the blocking effect.

1) The preparation postures of volleyball blocking technique are as follows:

(1) Block preparation posture. Arms are straight, and shoulders are at the same height.

(2) The five fingers are naturally opened, and the wrist is naturally bent into an arc to keep the body balanced and stable.

(3) Facing the net, the feet should be opened in parallel about shoulder width, 30-40 cm away from the net, the knees should be slightly bent, and the arms should be naturally bent and placed on the chest. Ready to take off or move at any time.

(4) When blocking the ball, the arms should be as straight as possible, and the forearms should be lifted on the shoulders. The distance between the hands should be less than the diameter of the ball to prevent the ball from leaking. Stretch arms in time, it is easy to be out of bounds by thugs or avoided by blockers too early, and it is difficult to stop the ball in time too late.

(5) In order to improve the blocking point when blocking the high penalty from the far net, the method of straightening the arm and wrist upward can be adopted to block the spiking route and block the ball upward.

2) When moving, pay attention to the fact that feet are shoulder width apart, your knees are slightly bent, and upper body leans forward slightly. When one arm swings forward and upward, the other arm should move forward and upward with the swing direction, but it should not exceed the height of the head; When the arm swings forward and upward, the shoulder joint should rotate slightly backward; When the arm is extended forward, the upper body can lean forward slightly. Tilt upper body back slightly, but not too much. When the blocking arm or hand is at the highest point, the upper body should be lifted and slightly tilted back. At the same time, push back with feet to move body weight forward and forward.

(1) Students control the ball with their arms and move according to the height, size and landing point of the ball. Arm movements include upper arm and wrist movements. When blocking, the upper arm is straight and shoulder-width, and the elbow joint is slightly flexed, so that the upper arm and the lower arm are in a

straight line to control the strength and direction of the ball. When the ball is higher than the shoulder, the upper arm naturally droops. When the ball is below the shoulder, bend the elbow of the upper arm and straighten it forward and upward. When the ball is above the waist, the forearm and forearm form a straight line. When blocking the net, control the ball with the strength of the wrist. In the process of blocking, the strength of the wrist is very important. The wrist should not only have good flexibility and coordination, but also certain strength to control the ball. Key points of arm action when blocking the net: straighten and bend the elbow; The boom is vertical to the ground; Five fingers open naturally; The wrist naturally bends into an arc; Press the wrist down to make it stronger; Keep body balanced and stable.

(2) After take-off, students can shift their weight to front feet and quickly retract between their legs. When taking off, straighten legs, turn body slightly to the left, then lift upper body and let arms droop naturally. When the ball approaches the two arms, the center of gravity of the body moves forward quickly, and the upper body leans back quickly, so that the speed of swinging the arms forward is greater than the speed of the ball. During the whole take-off, the arm should be naturally straightened with the back of the upper body to keep the body balanced. The more the upper body leans back, the better the blocking effect. But players can't force the back to show difficult movements.

When taking off, pay attention to:

Firstly, keep arms straight and get as close to the ball as possible.

Secondly, the upper body should keep a certain forward tilt.

Thirdly, arms should be completely open.

Fourthly, don't suddenly accelerate or stop during take-off.

Fifthly, don't press the ball with the wrist or pluck it with fingers when taking off.

Sixthly, after taking off, move the body weight to the front foot and quickly retract between the legs.

3) Determine the hitting point according to the impact point of the opponent's service and the included angle between the ball and the ground.

(1) From the flying direction of the ball, the hitting direction of the block is consistent with the flying direction of the ball, which is beneficial to the coordination of take-off, moving and blocking. However, it can't be considered that blocking only plays the role of "take-off", and it also needs the cooperation of technical actions such as action, take-off and hitting.

(2) From the time of blocking, the preparation should be started before the ball takes off. Only in this way, can players get ready for take-off.

(3) From the perspective of blocking, the hitting point should be determined according to the landing point of the opponent's service and the angle between the ball and the ground. If it is a general flat serve, players can lift serving straight up with half an arm and block the ball with arm strength. If it is a heavy serve or an oblique serve, all arms should be straight and lifted upward to stop the ball with physical strength.

(4) From the coordination of blocking action, players should grasp it flexibly according to the situation of the server, and don't fix it. At the same time, be careful not to block the ball with arms only, but also to be comprehensive.

4) After the blocker took off smoothly, the students quickly returned to the preparation posture. When landing, put arms back, push legs to the ground at the same time, bend elbows and stretch forward, and move forward the body center of gravity. Hold the ball on the back of the block with both hands, with knees slightly bent and slightly buckled. After the blocker lands, he should actively look for the next blocker and quickly turn his attention to the goal of preparing for the next blocker. When he realizes that he is ready, he should make correct judgments and reactions in time.

(1) Pay attention to the position and direction of the incoming ball when blocking the net and choose the appropriate take-off method according to the size and strength of the incoming ball. When judging that the ball is in front of the setter or the net, players can block the net with both hands or one hand; When judging that the opponent's offensive power is strong or the ball moves in his own direction, block the net with one or both hands.

(2) When intercepting spiking, choose the appropriate take-off mode without hesitation. After taking off, he should pay attention to the size and strength of the ball to determine whether he can block it.

(3) When blocking, pay attention to the reasonable selection of blocking stations. When blocking, players should determine the position according to his own ability and the direction of the opponent's attack. The position should be far away from the attacking players, so as to observe and judge the direction and strength of the ball.

In sum, teachers can make students feel the tension and intensity of volleyball match by simulating the match and watching the video of the match and stimulate their interest in learning. Coaches need to design suitable training scenes

according to athletes' technical level and training objectives. For example, a standard volleyball court with a length of 1.8 meters and a width of 2 meters is set indoors. The two rows of chairs are 1.5 meters apart. There are five balls in each corner, two of which are volleyball. There are six chairs on the field, and there is a 1.2m wide runway between the chairs. At the beginning of the volleyball match, the referee and the referee sit in the chairs in the first row, and two players stand on both sides of the playing field. The referee can pass the ball and serve to the players by hand or start with gestures. The two players who practice blocking practice according to the referee's requirements. It can simulate the pressure situation in the game and create various blocking environments, such as different heights and speeds. By creating diverse scenes, athletes can adapt to different competition conditions and improve their ability to cope with complex situations.

Measurement and Evaluation of Volleyball Skill

Xu Wenchao and Cheng Yu (2018) stated that the floating ball in the front hand needed to be put together with five fingers, cut the wrist back, swing from the back with the right arm, hit the ball behind the bottom of the palm root, and make the ball float over the net. In the course of volleyball game, this kind of service had the characteristics of fast speed and great impact. The characteristics of front overhand serve were different from the technical characteristics of front overhand float serve. The players needed to face the net, left and right feet open back and forth, and then the ball to the head about one meter. At this time, lift the right arm parallel to the elbow joint, the hitting palm naturally open, the body slightly to the right, the center of gravity forward, and then use the left moving body strength to drive the right arm to hit the ball, prompt the volleyball to fly upward. This batting method could give full play to the explosive power of the arm, thus enhancing the impact and explosiveness of the volleyball with strong aggression, and easy to grasp the drop point.

Duan Huixiong (2019) pointed out that blocking was one of the basic techniques of volleyball. Players approached the net and reached their hands above the net to block and volley the opponent's ball. According to the number of blocks, blocking skill could be divided into single blocking and collective blocking. Collective blocking could be divided into double blocking and three blocking. 1) Single block. Single blocking technique was the most basic form of blocking. The players faced the net, the feet were about shoulder width, 30-40 cm away from the net, the knees were slightly bent, and the arms were naturally bent in the chest. After the jump, the

center of gravity was lowered, the knees were bent, and the body was pushed off the ground to make the vertical jump. 2) Double block. Double block was the main form of collective block. When blocking, there was a main block player and a partner, the main block player moved to the position of the right spike point and was ready to jump, and the partner moved quickly to the main block player and was ready to jump at the same time. The distance between the two players must be appropriate. When the double block took off, the arms of the two people should swing upwards in a small arc in front of the body and try to jump vertically upward to prevent collision or interference with each other. When the spike was near the boundary line, the outside hand of the blocker near the boundary line should be properly turned inside to prevent the beater from going out of bounds. 3) Effective blocking. Effective blocking meant that there were three chances according to the rules of the International Volleyball Federation. Blocking the ball did not count as three contact range, that is, after blocking, the team's players also had three contact opportunities.

Tian Yonggang (2021) pointed out the spike hitting point should be kept above the highest point of the jump and the highest point of the arm straight (the vertical height between the ground and the ball at the moment of hitting), the higher the hitting point, the greater the possibility of passing the net. The dot was the vertical height between the ball and the ground after the ball was hit through the net. The same height of the hitting point, the dot was different, but the lowest dot was at least the net height + the radius of the ball. Mathematical geometry (regardless of gravity) was used to calculate where to hit the opponent's field. The vertical space of hitting points was divided into 6 sections (2.65, 2.75, 2.85, 2.95, 3.05, 3.15), and the point of entry of these 6 different hitting points through the lowest crossing point was calculated.

In addition, the researchers also studied the multiple-choice test form and performance assessment to help teachers clearly check the volleyball skill as follows:

1. Multiple-Choice Test

Hughes A. (2005) The multiple-choice portion of test packets is usually the first one that test-takers encounter. The multiple-choice testing is that scoring can be completely accurate. Scoring using multiple-choice approaches is quick and efficient and it is intended to evoke from the student a particular response. As a result, we can utilize straightforward codes to display test-takers' responses. Score 1 indicates the right answer, while Score 0 indicates the wrong response. Statistical analysis can be used to analyze this item. The score can quickly classify an item as correct or incorrect because there is only one correct response.

Roediger & Marsh (2005) A multiple-choice question is a question type or method in which one or more of the choices are selected as correct (or more appropriate) answers. Multiple-choice questions are popular with test writers and users due to a range of advantages. In addition to having the same test function as single-choice questions, multiple-choice questions also have different characteristics from other types of multiple-choice questions.

Salwa A. (2012) The researcher proved that Multiple-choice The simplest test technique that is frequently utilized by test creators is the question test. Any condition, any circumstance, and any level or degree of education can use it. Actually, the scoring and response are what make it simple.

2. Rubric and Authentic Assessment

Gulikers J. T., et al. (2004) authentic assessment as "an assessment requiring students to use the same competencies, or combinations of knowledge, skills, and attitudes, that they need to apply in the criterion situation in the professional life" more accurately captures the nature of authentic assessment and the characteristics of criterion situations. The physical context, the social environment, the assessment outcome, the assessment criteria, and the actual criterion condition determines the degree of authenticity, With the use of this idea and framework, educators can examine and gauge the authenticity of assessments.

Andrade H. G. (2000) Rubrics are described as "assessment instruments designed to assist in identifying and evaluating qualitative differences in student performance

Dawson P. (2017) holistic and analytic rubric According to their level of specificity. Generic rubrics are shaped with performance criteria designed to reflect broad learning targets. For example, a problem-solving rubric is useful in dealing with assignments on Math, Physics, Economics, and so forth; a reading rubric can be applied not only for literature courses.

Nkhoma, M. et al. (2020) Rubrics are, in part, scoring systems, that aid and direct people in making judgments on a range of categories, including the caliber of students' work, academic performance, and educational resources. The scoring criteria are listed on a rubric, which also depicts all degrees of excellence.

However, applying Simpson Instructional Model in volleyball skills significantly boosts students' practical competencies. The researchers have developed rubric assessment criteria for the volleyball skill for 3 units: 1) volleyball serving skill as shown in table 2.2, 2) volleyball spike skill as shown in table 2.3–2.4 and 3) volleyball blocking skill as shown in table 2.5

Table 2.2 Developing scoring criteria to serv volleyball

Assessment items	Criterial of Score		
	3=Good	2=Fair	1=Poor
1. Float serving: at the point.	Able serve 8-10 balls at zone A point	Able serve 5-7 balls at zone A point	Able serve less than 5 balls at zone A point
2. Topspin serving: at the point			
3. Jump serving: at the point.			
4. Jump float serving: at the point.			
5. Friction serving: at the point.			

Table 2.3 Developing scoring criteria to spike volleyball

Assessment items	Criterial of Score		
	3=Good	2=Fair	1=Poor
1. Before spiking Players use the appropriate preparation posture: 1) feet are shoulder-width apart and slightly bent to maintain balance and stability, 2) keep hands in front of you ready to grab and pound, 3) keep arms straight and palms open, touch the ball with the palm and fingertips of the hand, 4) use their strength and hand skills to make the ball spin and be strong.	Students can prepare completely before spiking	Students can prepare moderately before spiking	Students can prepare little before spiking
2. Ready to take off Players use the appropriate preparation posture: 1) feet should be about shoulder width, 2) left foot is in front, his right foot is behind, and his heel is slightly raised, 3) lift your arms to the side, straighten your left arm, bend your right arm 90, and place it at your side, 4) Turn your upper body slightly to the left and lean forward about 45. Knees slightly bent.	Students can prepare completely ready to take off	Students can prepare moderately ready to take off	Students can prepare little ready to take off

Table 2.3 (Continue)

Assessment items	Criterial of Score		
	3=Good	2=Fair	1=Poor
3. Preparing posture All parts of the body should have a large range of activities and full extension: 1) the weight of the whole body is transferred to the left foot, the upper body turns left and leans forward slightly, and the left foot stretches forward slightly, 2) after kicking your legs, turn your hips quickly, tilt your upper body backward to the left, and swing your arms back and forth quickly. At the same time, the center of gravity moves forward to the right foot and turns right, and the arms are lifted forward and left from the back, 3) the key to preparing posture is to appropriately increase the upper body to lean forward.	Students can prepare complete body postures.	Students can prepare moderate body postures.	Students can prepare little body postures.
4. Take-off in situ student can take off in situ: 1) naturally open their arms, keep their eyes on the front, put their feet together or touch the ground with their front feet, 2) During the run-up, the right foot first lands on the ground in front of the sole of the foot, and the toes slightly turn outwards; 3) push the heel to the ground and lift the front foot off the ground. When hitting the ball, the forefoot is slightly buckled inward, and the knee is slightly bent.	Students can take off in situ the ball completely	Students can take off in situ the ball moderately	Students can take off in situ the ball a little

Table 2.3 (Continue)

Assessment items	Criterial of Score		
	3=Good	2=Fair	1=Poor
5. Take-off from back to front student can take-off from back to front mainly includes: 1) Rotate backward by 45 or 60; 2) Turn from front to top, lift your legs and take off with your hind feet; 3) keep the body upright, open your arms naturally, rotate your forearms inward and bend your elbows.	Students can take-off the ball from back to front completely	Students can take-off the ball from back to front moderately	Students can take-off the ball from back to front a little
6. Take-off in the air student can take-off in the air, and directly hits the ball in the air: 1) timely adjustment of body posture to reduce shock to the body. If the takeoff altitude is low after takeoff Rotational motion can be applied to drive arm and shoulder movement to increase swing width, 2) long-distance ball hitting try to buffer the hit before it hits the ground, 3) taking-off weight between feet and keep upper body straight or slightly to the right, 4) When hitting the ground, try not to use the landing technique with the strength of your waist and legs.	Students can take-off the ball in the air completely	Students can take-off the ball in the air moderately	Students can take-off the ball in the air a little

Table 2.4 Developing scoring criteria to block volleyball

Assessment items	Criterial of Score		
	3=Good	2=Fair	1=Poor
1. Preparing posture for volleyball blocking. Block preparation posture: 1) arms straight, shoulders at the same height, 2) five fingers are naturally opened, and the wrist is naturally bent into an arc to keep the body balanced and stable, 3) facing the net, feet should be opened in parallel about shoulder width, 30-40 cm away from the net, the knees should be slightly bent, and the arms should be naturally bent and placed on the chest. Ready to take off or move at any time.	Students can prepare posture of volleyball blocking completely	Students can prepare posture of volleyball blocking moderately	Students can prepare posture of volleyball blocking a little
2. Volleyball blocking When blocking the ball: 1) the arms should be as straight as possible, and the forearms should be lifted on the shoulders, the distance between the hands should be less than the diameter of the ball to prevent the ball from leaking, stretch your arm in time, 2) when blocking the high penalty from the far net, the method of straightening the arm and wrist upward can be adopted to block the spiking route and block the ball upward, 3) can control the ball with your arms and move according to the height, size and landing point of the ball, 4) Can block and hit the ball into the opponent's area	Students can block the ball completely	Students can block the ball moderately	Students can block the ball a little

Related Research

Zhou Yufeng (2014) made an experiment on the improvement of spiking skill in the process of applying Simpson Instructional Model. Experimental group: 35 students and Control group: Another 35 students with similar volleyball foundation were selected to use Simpson Instructional Model for spiking skill training. Spike skills were trained in stages, from basic hand shape and pace exercises to complex jump and spike movements in tandem. After the training, the students' spiking skill was evaluated again and compared with the pre-test data. The result showed that spiking skill was improved remarkable in the process of applying Simpson Instructional Model.

Zhao Meixia (2016) applied Simpson Instructional Model on volleyball serving technique. Experimental group: 30 students with similar volleyball foundation were selected and trained with Simpson Instructional Model. Control group: Another 30 students with similar volleyball foundation were selected for serving technique training using traditional teaching methods. After the training, the two groups of students were tested again on the service technique, and the same index was recorded and compared with the pre-test data. Volleyball serving skill was improved simply.

Chen Feng (2018) pointed out that the purpose of this study was to evaluate the effectiveness of Simpson Instructional Model in the learning of tennis skills for teenagers. By comparing the training results of the experimental group and the control group, this paper discussed the influence of the teaching mode on the improvement of the tennis skills of teenagers. Experimental group: 25 young tennis beginners and Simpson Instructional Model was adopted for 8 weeks of training. Control group: Another 25 teenagers with similar tennis level and trained by traditional teaching methods. Before the experiment, the two groups of teenagers were tested on basic tennis skills, including serving, receiving and baseline hitting. The experimental group was trained in stages according to Simpson Instructional Model, four times a week, for 60 minutes each time. The control group was trained according to traditional teaching methods, with the same frequency and duration as the experimental group. After the experiment, the two groups of teenagers were tested for tennis skills to evaluate the improvement of their skills. The experimental results showed that the improvement of the skills of serving, receiving and baseline hitting in the experimental group was significantly higher than that in the control group ($p<0.05$). This showed that Simpson Instructional Model had a significant advantage in the learning of tennis skills for teenagers.

Hu Haiying (2019) pointed out that the purpose of this study was to verify the effectiveness of Simpson Instructional Model in improving table tennis skills. By setting up the experimental group and the control group, the table tennis players were trained for six weeks, and the skill changes before and after the training were compared and analyzed. Experimental group: 25 table tennis players were selected and trained by Simpson Instructional Model. The model was also divided into seven stages, each containing specific training content and feedback mechanisms. Control group: Another 25 table tennis players were selected and trained by conventional training methods. Experimental process: Before the experiment, the two groups of players were tested on the basic skills of table tennis, including serving, receiving, forehand attacking and backhand blocking. The experimental group was trained in stages according to Simpson Instructional Model, four times a week, for 60 minutes each time. The control group was trained according to the conventional training method, and the training frequency and duration were the same as that of the experimental group. After the experiment, the basic skills of table tennis were tested between the two groups, and the data were collected for comparative analysis. The experimental results showed that the experimental group had significant improvement in serving, receiving, forehand attack and backhand push skills, compared with the control group ($p<0.05$). This proved the effectiveness of Simpson Instructional Model in improving table tennis skills.

Zhang Ruifei (2020) stated that that Simpson Instructional Model could effectively improve students' volleyball skill and had good operability and practicality. By comparing the volleyball skill level of the experimental class and the control class before and after the experiment, the practical effect of Simpson Instructional Model was evaluated. Experimental class: 40 students from the volleyball physical education course of a school. Control class: 40 students with the same volleyball foundation were selected as the control class for comparison with the experimental class. Pre-test. Basic skills test accuracy and stability of basic skills such as serving, passing, cushion, spiking and blocking. Post-test. The basic skills test: The theoretical knowledge test and the psychological and motivation survey were repeated in the pre-test to assess the students' progress after the experiment. Volleyball skill was improved in the process of post-test by Simpson Instructional Model.

Tian Yonggang (2021) made an experiment, and applied Simpson Instructional Model to blocking skill. Experimental group: 30 students to conduct blocking technique training by using Simpson Instructional Model. Control group: Another 30 students with similar volleyball foundation were selected for blocking

technique training by using traditional teaching methods. The teacher evaluated students' blocking techniques, including jump timing, blocking hand type, air judgment and body control. Experimental group: According to Simpson Instructional Model, block technique training was carried out in stages, from basic take-off and landing techniques to complex aerial judgment and coordinated defensive strategies. Control group: Traditional teaching methods were adopted, such as coach demonstration, student imitation, blocking practice in simulated game scenarios. After the training, re-evaluate the students' blocking techniques and compare them with the pre-test data. Simpson Instructional Model had many advantages in improving college students' basketball technical ability, which could help students better grasp and understand basketball technical movements, improve learning effect and learning interest.

Ma Yingyi (2022) the purpose of this study was to explore the effect of Simpson Instructional Model on the improvement of youth basketball skills. By setting up the experimental group and the control group, the adolescent basketball players were trained for eight weeks, and the change of skill level before and after the training was compared and analyzed. Experimental group: 30 young basketball players were selected and trained with Simpson Instructional Model. The model divided basketball skill training into seven stages: perception, preparation, guided response, mechanical action, complex explicit behavior, adaptation and optimization. Each stage was designed with targeted exercises and feedback mechanisms. Control group: Another 30 young basketball players were selected and trained by traditional teaching methods, namely teacher demonstration, students' imitation and free practice. Before the experiment, the two groups of players were tested on basic basketball skills, including dribbling, passing, shooting and defense. The experimental group was trained in stages according to Simpson Instructional Model, three times a week for 90 minutes each time. The control group was trained according to traditional teaching methods, with the same frequency and duration as the experimental group. Results analysis: The experimental results showed that the experimental group had significant improvement in dribbling, passing, shooting and defense skills, compared with the control group ($p<0.05$). This showed that Simpson teaching model had a significant effect on improving the basketball skills of teenagers.

Liao Xibi (2022) stated an empirical study on the effect of Simpson Instructional Model on swimming skill learning. By comparing the performance of the experimental group and the control group in the learning process of swimming skills, this study explored the influence of Simpson Instructional Model on the improvement

of swimming skills. The experiment period was four weeks, and the research objects were beginners and swimmers with a certain foundation. Experimental design: Experimental group: 20 beginners and 10 swimmers with a certain foundation were selected and trained by Simpson Instructional Model. This model emphasized phased learning and feedback mechanisms. Control group: Another 20 beginners and 10 swimmers with a certain foundation were selected and trained by traditional teaching methods. Before the experiment, the basic swimming skills of the two groups of participants were evaluated, including the mastery of basic swimming strokes such as freestyle and breaststroke. The experimental group was trained in stages according to Simpson Instructional Model, three times a week for 90 minutes each time. The control group was trained according to traditional teaching methods, with the same frequency and duration as the experimental group. After the experiment, the two groups of participants were tested for swimming skills to evaluate the improvement of their skills. Simpson Instructional Model can effectively improve the skill level of swimming participants through phased and targeted training methods. For swimming teaching, this model is a teaching method worth popularizing and applying.

Xu Mengjiao (2024) applied the Simpson Instructional Model in university PE. The research objects of the experimental group were 30 students and control group were 30 students. Personalized instruction: Simpson teaching model encouraged coaches to give personalized instruction according to the actual situation of the players to solve their specific problems in technical learning. This teaching method was helpful to give full play to the potential of each team member and improve the overall training effect. The research result proved that Simpson Instructional Model focused on cultivating team members' initiative and creativity, encouraging them to try new techniques and tactics. This teaching method helped to cultivate the independent thinking ability and innovation ability of the players, which laid a foundation for them to achieve excellent results in the competition.

In summary, the Simpson Instructional Model can effectively improve the skill level of various sports through the step-by-step and targeted training method. This teaching method is beneficial to let each player in the team play their best and improve the overall training effect. These research results prove that the Simpson Instructional Model focuses on cultivating the initiative and creativity of team members, encouraging them to try new techniques and strategies, and cultivating the players' independent thinking and creativity, laying the foundation for them to achieve excellent results in competitions.

Chapter 3
Research Methodology

Using Simpson instructional model to improve volleyball skill of undergraduate students, the contents included the following procedures:

1. The population/ sample group
2. Research instruments
3. Data collection
4. Data analysis

The Population/ Sample Group

The Population

There were 60 freshmen students, majoring in Physical Education with 2 classes from Chongqing Vocational College of Media, Chongqing city, China, in the second semester of the academic year 2023. (There was mixed ability in each class: high level, medium level and low level.)

The Sample Group

Through a random cluster sampling method, there were 30 freshmen students, majoring in Physical Education with 1 class from Chongqing Vocational College of Media, Chongqing city, China, in the second semester of the academic year 2023.

Research Instrument

Using Simpson instructional model to improve volleyball skill of undergraduate students. The research instruments are as follows:

1. Lesson plan based on Simpson Instructional Model

The researcher applied the teaching mode based on Simpson Instructional Model to create the lesson plans details were as follows:

1.1 Studied the proposal of Volleyball Course, to serve as a guideline for developing the lesson plan in this research and study guidelines for teaching based on Simpson Instructional Model from many academics: Huang Xinyun (2015), Shi Hongyu (2018), Hu Haiying (2019), Ma Yingyi (2020), and Zhang Ruifei (2022) to designed details in the teaching method.

1.2 Create 3 lesson plans on the subject about volleyball serving skill, volleyball spiking skill and volleyball blocking skill. By designing lesson plan using the Simpson Instructional Model theory, each lesson plan specified the details of the

topics as follows: 1) Perception, 2) Preparation, 3) Guided response, 4) Mechanism, 5) Complex response, 6) Adaptation, and 7) Creation. The Simpson Instructional Model theory was as follows:

Step 1: Perception, perception was the starting point of the learning process, which involved students receiving and processing external information through their senses. This stage was not limited to simple data collection, but also included the initial processing and understanding of the information, thereby laying the foundation for subsequent in-depth learning. Students formed initial impressions and conceptual frameworks of new knowledge in their minds based on the information they received.

Step 2: Preparation, after the perception, the students entered the preparation stage. The preparation stage was an important bridge for students to transition from old knowledge to new knowledge. Students needed to review and activate prior knowledge related to what was being studied in order to make connections. In addition to knowledge preparation, psychological preparation was equally important. Teachers encouraged students to think actively, boldly predict the learning path and results, and stimulated their intrinsic learning motivation.

Step 3: Guided response, at this stage, the guiding role of teachers was crucial, through the design of specific activities, to guide students to conduct preliminary exploration and practice of new knowledge. Teachers needed to carefully design teaching activities to ensure that the activities were targeted, challenging and interesting. In the activities, students actively participated in the learning process through practice, discussion and other ways to deepen the understanding and memory of new knowledge.

Step 4: Mechanism, mechanism stage meant in-depth analysis of the internal logic and principles of learning content, helped students understand the deep relationship behind knowledge, so as to build a systematic knowledge structure. Through explanation, demonstration, discussion and other ways, the internal logic and operation mechanism of the learning content were deeply analyzed to help students connect scattered knowledge points and form a systematic knowledge network.

Step 5: Complex response, this stage emphasized that students applied their knowledge to more complex and challenging tasks and demonstrated their learning results through practice. This was not only the consolidation and deepening of knowledge, but also an important embodiment of students' ability to improve. Teachers designed challenging learning tasks that required students to integrate their

knowledge to solve problems. Students worked independently or collaboratively to complete tasks and test learning effectiveness by demonstrating results.

Step 6: Adaptation, teachers required students to constantly adjust learning strategies and methods based on feedback and evaluation results during the learning process. It was a dynamic, ongoing process designed to help students find the learning path that worked best for them. Students adjusted their learning strategies and methods based on the feedback results to adapt to the changing learning environment and task requirements.

Step 7: Creation, creativity was the highest stage of learning, creation means the creation of new movements or manipulative materials based on the understanding, abilities and skills developed in the field of motor skills. Which required students to integrate, innovate and create what they had learned.

1.3 The completed lesson plan was presented to the thesis advisor to verify the suitability and consistency of the content. Then improve the teaching effect according to the suggestion.

1.4 After revising lesson plans, the researcher took them to 3 experts to verify the accuracy of the content and completeness of the lesson plan. And calculated the Index of Item Objective Congruence (IOC), the criteria for considering the consistency of the learning management plan were as follows:

Rating is +1 There is an opinion that "Consistent to relevant. "

Rating is 0 There is an opinion that "Not sure it consistent to relevant."

Rating is -1 There is an opinion that "Inconsistent with relevant. "

Each lesson plan had an IOC consistency index greater than or equal to 0.50, so it was considered suitable for use in research. The result of the Index of Item Objective Congruence (IOC) analysis of this lesson plan had an IOC=1.00 for all questions. And using the Simpson Instructional Model to assess the suitability of the lesson plans, the result found that the most suitable ($\bar{X}$=5.00, SD=0.00) for all contents: 1) volleyball serving skill, 2) volleyball spiking skill, and 3) volleyball blocking skill.

1.5 Improve the lesson plan received from the review according to the suggestions of experts to achieve more accuracy before actually applying it to the sample group.

2. Achievement of Volleyball Skill

The Volleyball course by using the Simpson Instructional Model to improve Volleyball skill of undergraduate students: 1) volleyball serving skill; 2) volleyball spiking skill; and 3) volleyball blocking skill. The steps in creating and determining the quality of achievement test are as follows:

2.1 Volleyball skill performance assessment

Procedures for creating the performance assessment, which is a practical test, included 3 contents and 13 items with steps to create and find quality as follows:

2.1.1 Content analysis, competence and learning objectives consistent with the lesson plan on 1) Volleyball serving skill: float serving, topspin serving, jump serving, jump float serving, and friction serving. 2) Volleyball spiking skill: before spiking, ready to take off, preparing posture, take-off in situ, take-off from back to front, take-off in the air, and 3) Volleyball blocking skill: from the flying direction of the ball, from the time of blocking, from the perspective of blocking, from the coordination of blocking action.

2.1.2 Studied the theory, principles, and methods of performance assessment from documents, textbooks, and related research.

2.1.3 Determine scoring criteria for performance assessment by authentic assessments (holistic rubric) rating on 3 scales, as follow in table 3.1-3.3

Table 3.1 Scoring criteria of volleyball serving skill

Assessment items	Criterial of Score		
	3=Good	2=Fair	1=Poor
1. Float serving: at the point	Serve 8-10 balls at zone A point	Serve 5-7 balls at zone A point	Serve less than 5 balls at zone A point
2. Topspin serving: at the point			
3. Jump serving: at the point			
4. Jump float serving: at the point			
5. Friction serving: at the point			

Table 3.2 Scoring criteria of volleyball spiking skill

Assessment items	Criterial of Score		
	3=Good	2=Fair	1=Poor
1. Before spiking Players use the appropriate preparation posture: 1) Feet are shoulder-width apart and slightly bent to maintain balance and stability, 2) Keep hands in front of you, ready to grab and pound, 3) Keep arms straight and palms open, touch the ball with the palm and fingertips of the hand, 4) Use their strength and hand skills to make the ball spin and be strong.	Students can prepare completely before spiking	Students can prepare moderately before spiking	Students can prepare little before spiking
2. Ready to take off Players use the appropriate preparation posture: 1) Feet should be about shoulder width, 2) Left foot is in front, his right foot is behind, and his heel is slightly raised, 3) Lift your arms to the side, straighten your left arm, bend your right arm 90, and place it at your side, 4) Turn your upper body slightly to the left and lean forward about 45. Knees slightly bent.	Students can be completely ready to take off	Students can be moderately ready to take off	Students can be little ready to take off

Table 3.2 (Continue)

Assessment items	Criterial of Score		
	3=Good	2=Fair	1=Poor
3. Preparing posture All parts of the body should have a large range of activities and full extension: 1) The weight of the whole body is transferred to the left foot, the upper body turns left and leans forward slightly, and the left foot stretches forward slightly, 2) After kicking your legs, turn your hips quickly, tilt your upper body backward to the left, and swing your arms back and forth quickly. At the same time, the center of gravity moves forward to the right foot and turns right, and the arms are lifted forward and left from the back, 3) The key to preparing posture is to appropriately increase the upper body to lean forward.	Students can prepare complete body postures.	Students can prepare moderately body postures.	Students can prepare little body postures.
4. Take-off in situ Student can take off in situ: 1) Naturally open their arms, keep their eyes on the front, put their feet together or touch the ground with their front feet, 2) During the run-up, the right foot first lands on the ground in front of the sole of the foot, and the toes slightly turn outwards; 3) Push the heel to the ground and lift the front foot off the ground. When hitting the ball, the forefoot is slightly buckled inward and the knee is slightly bent.	Students can take off in situ the ball completely	Students can take off in situ the ball moderately	Students can take off in situ the ball a little

Table 3.2 (Continue)

Assessment items	Criterial of Score		
	3=Good	**2=Fair**	**1=Poor**
5. Take-off from back to front Student can take off from back to front mainly includes: 1) Rotate backward by 45 or 60; 2) Turn from front to top, lift your legs and take off with your hind feet; 3) Keep the body upright, open your arms naturally, rotate your forearms inward and bend your elbows.	Students can take off the ball from back to front completely	Students can take off the ball from back to front moderately	Students can take off the ball from back to front a little
6. Take-off in the air Student can take off in the air, and directly hits the ball in the air: 1) Timely adjustment of body posture to reduce shock to the body. If the take-off altitude is low after take-off, rotational motion can be applied to drive arm and shoulder movement to increase swing width, 2) Long-distance ball hitting tries to buffer the hit before it hits the ground, 3) Taking-off weight between feet and keep upper body straight or slightly to the right, 4) When hitting the ground, try not to use the landing technique with the strength of your waist and legs.	Students can take off the ball in the air completely	Students can take off the ball in the air moderately	Students can take off the ball in the air a little

Table 3.3 Scoring criteria of volleyball blocking skill

Assessment items	Criterial of Score		
	3=Good	2=Fair	1=Poor
1. Preparing posture for volleyball blocking. Block preparation posture: 1) arms straight, shoulders at the same height, 2) five fingers are naturally opened, and the wrist is naturally bent into an arc to keep the body balanced and stable, 3) facing the net, feet should be opened in parallel about shoulder width, 30-40 cm away from the net, the knees should be slightly bent, and the arms should be naturally bent and placed on the chest. Ready to take off or move at any time.	Students can prepare posture of volleyball blocking completely	Students can prepare posture of volleyball blocking moderately	Students can prepare posture of volleyball blocking a little
2. Volleyball blocking When blocking the ball: 1) the arms should be as straight as possible, and the forearms should be lifted on the shoulders, the distance between the hands should be less than the diameter of the ball to prevent the ball from leaking, stretch your arm in time, 2) when blocking the high penalty from the far net, the method of straightening the arm and wrist upward can be adopted to block the spiking route and block the ball upward, 3) can control the ball with your arms and move according to the height, size and landing point of the ball, 4) Can block and hit the ball into the opponent's area	Students can block the ball completely	Students can block the ball moderately	Students can block the ball a little

2.1.4 Present the formulated assessment standards to the thesis supervisor, verify their precision, and implement changes.

2.1.5 Submit volleyball skill performance assessment criteria created to 3 experts for measurement and inspection. Experts check the content validity and calculate the Index of Item Objective Congruence (IOC). The criteria for judging the consistency of performance assessment are as follows:

Rating is +1 There is an opinion that "Consistent to objective of learning."

Rating is +0 There is an opinion that "Not sure it consistent to objective of learning."

Rating is -1 There is an opinion that "Inconsistent with objective of learning."

Each performance assessment had an Index of Item Objective Congruence (IOC) greater than or equal to 0.50. The result of the Index of Item Objective Congruence (IOC) at 1.00 for all questions.

2.1.6 Update and improve the performance assessment that have been verified by experts. Then take it to try out with students who were not a sample group for 30 freshmen students, majoring in Physical Education and calculated the quality of confidence values in performance assessment by analysis the reliability by Cronbach's Coefficient Alpha method at 0.75

2.2 Multiple-choice

2.2.1 Studied the theory about how to create multiple choice questions test and created multiple choice questions test for 3 lesson plans about the basic knowledge of each content were 1) volleyball serving skill; 2) volleyball spiking skill; and 3) volleyball blocking skill were totally 23 items to measure the achievement of volleyball skill. The scoring criteria 1 point for correct answer and 0 point for wrong answer.

2.2.2 Suggested the multiple-choice test to the advisor and check for accuracy and make improvements as suggested.

2.2.3 The multiple-choice test is handed over to 3 experts for measurement and evaluation. Check the content validity and calculated the Index of Item Objective Congruence (IOC). The criteria for judging the consistency of the test are as follows:

Rating is +1. There is an opinion that "Consistent to objective of learning."

Rating is 0. There is an opinion that "Not sure it consistent to objective of learning."

Rating is -1. There is an opinion that "Inconsistent with objective of learning."

Each question had an IOC consistency index greater than or equal to 0.50, so it was considered suitable for use in research. The result of the Index of Item Objective Congruence (IOC) at 1.00 for all questions.

2.1.4 Improved and revised items test that have been verified by experts. Then took it to try out with students who were not a sample group for 30 freshmen students, majoring in Physical Education to calculate the quality of the test. The difficulty value (p) was selected in the range 0.20–0.80 and discrimination power (r) was selected in the range 0.20–1.00 (Landis, J. R., & Koch, G. G. 1977). The results of the quality analysis of the questions found that there were 23 questions, difficulty value (p), discrimination power (r), and reliability: 1) Volleyball serving skill, there were 8 questions (p=0.47-0.77, r=0.20-0.53), 2) Volleyball spiking skill, there were 8 questions (p=0.53-0.80, r=0.20-0.47), and 3) Volleyball blocking skill, there were 7 questions (p= 0.47-0.73, r= 0.20-0.27). And checking the quality of volleyball skill, which was determined by Kuder Richardson's method, the reliability (Kr20) at 0.72.

Data Collection

The data collection was as follows:

1. Coordinate with 3 professional scholar experts dispense official document from Bansomdejchaopraya Rajabhat University and offer information about data collection process and research instruments: lesson plan, multiple choice test and performance assessment form for consideration (Index of Objective Consistency: IOC). And Collect data from 3 professional experts and analysis data for consideration.

2. This research was experimental research according to One Group Pretest Posttest Design as follow Table 3.4

Table 3.4 Experimental design

Group	Pretest	Experimental	Posttest
R	O_1	X	O_2

The meaning of the symbols used in the experimental design

R means Random Sampling

X means Experimental

O_1 means Pretest

O_2 means Posttest

This research the data collection was as follows:

1. Keep contact with Bansomdejchaopraya Rajabhat University to request an official letter for an expert to inspect research equipment.

2. Organize a test before starting the experiment to understand students how to study student role learning objectives evaluation method and the benefits that will be gained from taking the ability test and learning activities during the experiment.

3. Test before teaching (Pretest) with 30 freshmen students, majoring in Physical Education from Chongqing Vocational College of Media in China, which was a sample group, and checked the score record to analyze the data.

4. The experimental with the sample group to use the lesson plan of volleyball skill course based on the Simpson Instructional Model. The course is divided into 3 units, total 27 hours and teaching in July 2024, it's not counting the days of pretest and posttest, as follow in Table 3.5

Table 3.5 Volleyball skill course based on Simpson Instructional Model

Contents	Activity
	- Introduction
	- Learning content
	- Learning Activity: Using Simpson Instructional Model based on teaching with 7steps
Serving skill	Step 1: Perception
Spiking skill	Step 2: Preparation
Blocking skill	Step 3: Guided response
	Step 4: Mechanism
	Step 5: Complex response
	Step 6: Adaptation
	Step 7: Creation

5. Testing again after teaching (Posttest) with 30 freshmen students, majoring in Physical Education from Chongqing Vocational College of Media in China, which was a sample group, and checked the score record to analyze the data.

Data Analysis

The researchers analyzed the data by program computer, the order in which the data were analyzed was as follows:

1. Verify and analyze the effectiveness of volleyball skill course based on the consistency index (Index of Items Objective Congruence: IOC).

2. Quantitative data were analyzed through descriptive statistics; means, and standard deviation.

3. Quantitative data were analyzed through inferential statistics; then calculate the different score of learning ability before and after using Simpson Instructional Model were analyzed through t-test for dependent samples.

Chapter 4
Results of Analysis

Using Simpson Instructional Model to improve volleyball skill of undergraduate students. The objectives consist of two parts: 1) to use Simpson Instructional Model to improve volleyball skill of undergraduate students and 2) to compare students' volleyball skill before and after the implementation based on Simpson Instructional Model. The data analysis results are as follows:

1. Symbol and Abbreviations
2. Results of data analysis

The details are as follows:

Symbol and Abbreviations

Represent data analysis results based on symbols and semantics. The details are as follows:

n means the number of students

$\bar{X}$ means the average

SD. means the standard deviation.

D means the difference in scores between before and after learning.

df means degree of freedom

t means the statistical value to be used in the t-test

P means p-valve

** means statistical significance at the level .01

Results of Data Analysis

Using Simpson Instructional Model to improve volleyball skill of undergraduate students. The researcher conducted the research in the following order:

Part 1: Using Simpson Instructional Model to improve volleyball skill of undergraduate students

The application of Simpson Instructional Model in volleyball skill can produce remarkable influence. The influence of Simpson Instructional Model on volleyball skill is mainly reflected in the aspects of skill decomposition and refinement, improvement of learning effect, timely feedback and adjustment, and establishment of correct technical action concept. These influences are helpful for students to better master and use volleyball skill and improve their volleyball level.

Firstly, researchers studied the documents and related research about Simpson Instructional Model to improve volleyball skill from many researchers: Huang Xinyun (2015), Shi Hongyu (2018), Hu Haiying (2019), Ma Yingyi (2020), and Zhang Ruifei (2022). In the research, the researcher synthesized into 7 steps used in 3 lesson plans to improve volleyball skill: Step 1 Perception, Step 2 Preparation, Step 3 Guided response, Step 4 Mechanism, Step 5 Complex response, Step 6 Adaptation, Step 7 Creation. The steps were as follows:

Step 1: Perception, the starting point of the learning process, which involved receiving and processing external information through their senses from students. The student's primary task was initial exposure to and perception of the learning material or situation. Through various senses such as vision, hearing and touch, students formed an initial impression and understanding of what they were about to learn and form initial perception and interest in new knowledge.

Step 2: Preparation, after the perception, the students entered the preparation stage. The preparation stage was an important bridge for students to transition from old knowledge to new knowledge. The set stage was an important bridge for students to transition from old knowledge to new knowledge. It emphasized the activation of students' existing knowledge system and provided the necessary background and support for the learning of new knowledge. Students needed to review and activate prior knowledge related to what was being studied in order to make connections. In addition to knowledge preparation, psychological preparation was equally important. Teachers encouraged students to think actively, boldly predict the learning path and results, and stimulated their intrinsic learning motivation. Which involved the adjustment of students' learning attitude, motivation and expectation.

Step 3: Guided response, at this stage, the guiding role of teachers was crucial, through the design of specific activities, to guide students to conduct preliminary exploration and practice of new knowledge. Teachers needed to carefully design teaching activities to ensure that the activities were targeted, challenging and interesting. In the activities, students actively participated in the learning process through practice, discussion and other ways to deepen the understanding and memory of new knowledge.

Step 4: Mechanism stage meant in-depth analysis of the internal logic and principles of learning content, helped students understand the deep relationship behind knowledge, so as to build a systematic knowledge structure. Through explanation, demonstration, discussion and other ways, the internal logic and

operation mechanism of the learning content were deeply analyzed to help students connect scattered knowledge points and form a systematic knowledge network.

Step 5: Complex response, this stage emphasized that students applied their knowledge to more complex and challenging tasks and demonstrated their learning results through practice. This was not only the consolidation and deepening of knowledge, but also an important embodiment of students' ability to improve. Teachers designed challenging learning tasks that required students to integrate their knowledge to solve problems. Students worked independently or collaboratively to complete tasks and test learning effectiveness by demonstrating results.

Step 6: Adaptation, this stage teachers required students to constantly adjust learning strategies and methods based on feedback and evaluation results during the learning process. It was a dynamic, ongoing process designed to help students find the learning path that worked best for them. Students adjusted their learning strategies and methods based on the feedback results to adapt to the changing learning environment and task requirements.

Step 7: Creation, this creativity was the highest stage of learning, which required students to integrate, innovate and create what they had learned. This was not only the ultimate test of students' comprehensive ability, but also the concentrated embodiment of their innovative spirit and creativity. Students needed to integrate and reconstruct what they had learned to form their own unique insights and knowledge system.

Secondly, the researcher created lesson plan with elements: 1) Content, 2) Objective of Learning, 3) Main point/Concept, 4) Introduction, 5) Learning content, 6) Learning activities, 7) Measurement and Evaluation, and 7) Teaching media were as follows:

Introduction (20 minutes)

Introducing the learning objectives of volleyball skill, the teacher first introduced the contents of Simpson instructional model and expounds in detail the significance and application of Simpson instructional model in seven stages of volleyball skill.

Learning Content (1 hour)

The teacher explained the concept of volleyball skill:

1. Volleyball serving: (1) the importance of volleyball serving; (2) Basic rules of volleyball serving; (3) Classification of volleyball serving techniques; (4) Common methods of volleyball serving technique; and (5) the technical essentials of volleyball serving.

2. Volleyball spike: (1) volleyball spike technique; (2) The preparation posture of volleyball spike technique; (3) Volleyball spike skills; and (4) Simulation practice.

3. Volleyball blocking: (1) the importance of blocking; (2) Basic rules of volleyball blocking technique; (3) Volleyball blocking skills; and (4) Simulation practice.

Learning Activities (7 hour and 40 minutes)

The teacher explained the step of Simpson instructional model in seven stages of volleyball skill and practice the students:

Step 1 perception: Sensory stimulation, clue selection to cultivate students' sensory awareness of volleyball skill

Step 2 preparation: Take students to the actual volleyball court and let them experience volleyball.

Step 3 guided response: Students to do jogging and practice volleyball skill.

Step 4 Mechanism: This is the intermediate stage in learning a complex skill. After learning each content, students practice volleyball skill.

Step 5 Complex response: The skillful performance of motor acts that involve complex movement patterns. When practiced volleyball skill, students must pay attention to improving physical fitness and basic skills.

Step 6 Adaptation: Skills are well developed, and the individual can modify movement patterns to fit special requirements. Students will be better when they practice adaptation repeatedly.

Step 7 Creation, students to integrate, innovate and create new movement patterns to fit a particular situation or specific problem. Learning outcomes emphasize creativity based upon highly developed skills. Students practice the volleyball skill again and innovate appropriately.

Thirdly, after completed 3 lesson plans: 1) Serving skill, 2) Spiking skill, and 3) Blocking skill was presented to the thesis advisor to verify the suitability and consistency of the contents. According to the suggestion and lesson plans from 3 experts to consider the Index of Item Objective Congruency (IOC). The data analysis was assessment of the quality of the lesson plan according to the project teaching to improve volleyball skill for undergraduate students. The results were shown in table 4.1- 4.5.

Table 4.1 Assessment of the quality of volleyball serving skill lesson plan by experts

Assessment Item	$\bar{X}$	SD.	Interpretation
1. The content is related to the learning	5.00	0.00	Most suitable
2. The learning objectives are consistent with the subject matter.	5.00	0.00	Most suitable
3. The learning processes are related to teaching.	5.00	0.00	Most suitable
4. The learning activities are related with using Simpson instructional model.	5.00	0.00	Most suitable
5. The assignment of practice volleyball serving skill related with the content of learning.	5.00	0.00	Most suitable
6. T here are various assessments related with learning objectives.	5.00	0.00	Most suitable
7. The measurement and evaluation related with learning objectives.	5.00	0.00	Most suitable
Total	**5.00**	**0.00**	**Most suitable**

From Table 4.1 the assessment of the quality of volleyball serving skill lesson plan by experts overall, the suitability of the research objectives had the most suitable ($\bar{X}$=5.00, SD.=0.00). When considering the assessment item, it was found that it was the most suitable ($\bar{X}$= 5.00, SD.=0.00) for every assessment item and could be used for teaching.

Table 4.2 Assessment of the quality of volleyball spiking skill lesson plan by experts

Assessment Item	$\bar{X}$	SD.	Interpretation
1. The content is related to the learning	5.00	0.00	Most suitable
2. The learning objectives are consistent with the subject matter.	5.00	0.00	Most suitable
3. The learning processes are related to teaching.	5.00	0.00	Most suitable
4. The learning activities are related with using Simpson instructional model.	5.00	0.00	Most suitable
5. The assignment of practice volleyball spiking skill related with the content of learning.	5.00	0.00	Most suitable
6. There are various assessments related with learning objectives.	5.00	0.00	Most suitable
7. The measurement and evaluation related with learning objectives.	5.00	0.00	Most suitable
Total	**5.00**	**0.00**	**Most suitable**

From Table 4.2 the assessment of the quality of volleyball spiking skill lesson plan by experts overall, the suitability of the research objectives had the most suitable ($\bar{X}$=5.00, SD.=0.00). When considering the assessment item, it was found that it was the most suitable ($\bar{X}$=5.00, SD.=0.00) for every assessment item and could be used for teaching.

Table 4.3 Assessment of the quality of volleyball blocking lesson plan by experts

Assessment Item	$\bar{X}$	SD.	Interpretation
1. The content is related to the learning	5.00	0.00	Most suitable
2. The learning objectives are consistent with the subject matter.	5.00	0.00	Most suitable
3. The learning processes are related to teaching.	5.00	0.00	Most suitable
4. The learning activities are related with using Simpson instructional model.	5.00	0.00	Most suitable
5. The assignment of practice volleyball blocking skill related with the content of learning.	5.00	0.00	Most suitable
6. There are various assessments related with learning objectives.	5.00	0.00	Most suitable
7. The measurement and evaluation related with learning objectives.	5.00	0.00	Most suitable
Total	**5.00**	**0.00**	**Most suitable**

From Table 4.3 the assessment of the quality of volleyball blocking lesson plan by experts overall, the suitability of the research objectives had the most suitable ($\bar{X}$=5.00, SD.=0.00). When considering the assessment item, it's found that it was the most suitable ($\bar{X}$=5.00, SD.=0.00) for every assessment item and could be used for teaching.

After learning according to the lesson plans completely, the researcher conducted a test of the students' volley skill with 30 freshmen students, majoring in Physical Education from Chongqing Vocational College of Media, Chongqing city, China, would be chosen as the sample group. The results of volleyball skill scores before and after learning were shown in table 4.4

Table 4.4 Volleyball skill score before and after using Simpson Instructional Model of undergraduate students

Student ID	Pretest (62)	Posttest (62)	Difference Scores (D)	Student ID	Pretest (62)	Posttest (62)	Difference Scores (D)
1	21	46	25	16	29	48	19
2	23	48	25	17	32	49	17
3	36	56	20	18	31	47	16
4	29	48	19	19	29	56	27
5	30	47	17	20	28	51	23
6	36	54	18	21	35	51	16
7	30	47	17	22	33	51	18
8	33	48	15	23	25	45	20
9	25	49	24	24	24	44	20
10	28	47	19	25	36	56	20
11	24	46	22	26	27	50	23
12	30	53	23	27	25	50	25
13	31	49	18	28	30	48	18
14	24	44	20	29	27	49	22
15	23	46	23	30	27	46	19
				$\bar{X}$	28.70	48.97	
				SD.	4.18	3.35	

From table 4.4, volleyball skill score between before and after using Simpson Instructional Model of undergraduate students, the average score before learning was 28.70, the average score after learning was 48.97. The after learning score was found to be higher than the before learning score. It shows that teaching by using Simpson Instructional Model of undergraduate students could improve students' volleyball skill.

Part 2: The comparison of students' volleyball skill before and after the implementation based on Simpson Instructional Model.

The researcher implemented volleyball skill by using Simpson Instruction Model with 30 freshmen students, majoring in Physical Education from Chongqing Vocational College of Media, Chongqing city, China. The comparison of students' volleyball skill score before and after learning to analyze the data using average statistics, standard deviation, and t-test for dependent samples which the data analysis results are shown in table 4.5

Table 4.5 The comparison of students' volleyball skill score before and after the learning by using Simpson Instructional Model

Volleyball skill	Testing	n	Full score	$\bar{X}$	SD.	df	t	p
Serving skill	pretest	30	23	10.93	2.49	29	23.80**	.00
	posttest	30	23	17.87	1.63			
Spiking skill	pretest	30	26	12.50	1.85	29	37.87**	.00
	posttest	30	26	20.70	1.56			
Blocking skill	pretest	30	13	5.27	1.14	29	23.51**	.00
	posttest	30	13	10.40	1.04			
Total	**pretest**	**30**	**62**	**28.70**	**4.18**	**29**	**35.36****	**.00**
	posttest	**30**	**62**	**48.97**	**3.35**			

**Statistically significant at the level .01 ($p \leq .01$)

From table 4.5, the comparison of students' volleyball skill score before and after learning by using Simpson Instructional Model. The result found that volleyball skill score of students after learning higher than before learning statistically significant at the level .01. When considering the results of data analysis classified by content: serving skill, spiking skill, and blocking skill. The result found that volleyball skill score of students after learning higher than before learning statistically significant at the level .01 for all contents. Therefore, learning by using Simpson Instructional Model could improve students' volleyball skill.

Chapter 5
Conclusion Discussion and Recommendations

Using Simpson Instructional Model to improve volleyball skill of undergraduate students, the purpose of this research was 1) to use Simpson Instructional Model to improve volleyball skill of undergraduate students and 2) to compare students' volleyball skill before and after the implementation based on Simpson Instructional Model. Through cluster random sampling, 30 freshmen majoring in physical education from Chongqing Vocational College of Media, Chongqing city, China, in the second semester of the academic year 2023, whose would be chosen as the sample group. The instrument of this research are as follows:

1. Study volleyball skill standards developed by Chongqing Vocational College of Media. Curriculum Standards for volleyball skill was used as a guide for developing a learning program through learning objectives, content, guidelines for organizing measurement and assessment of learning activities, and teacher guidance. In addition, study the concepts, theories related to the theory from documents, textbooks, and related research to create a learning management plan.

2. Develop 3 lesson plans by using Simpson Instructional Model to improve volleyball skill: 1) Serving skill; 2) Spiking skill; and 3) Blocking skill, total 27 hours. Each lesson plan specifies the details of the with elements: 1) Content, 2) Objective of Learning, 3) Main point/Concept, 4) Introduction, 5) Learning content, 6) Learning activities, 7) Measurement and Evaluation, and 7) Teaching media and learning schedule for teaching. The researcher has studied the documents and related research about the Simpson Instructional Model and studied information from many researchers: Huang Xinyun (2015), Shi Hongyu (2018), Hu Haiying (2019), Ma Yingyi (2020), and Zhang Ruifei (2022). Simpson Instructional Model was synthesized into 7 steps used in 3 lesson plans to improve volleyball skill: Step 1 Perception, Step 2 Preparation, Step 3 Guided response, Step 4 Mechanism, Step 5 Complex response, Step 6 Adaptation, Step 7 Creation.

3. Created research instrument for 3 contents: 1) multiple choice test were totally 23 questions, the scoring criteria 1 point for correct answer and 0 point for wrong answer. And 2) created performance assessment for 13 assessment items, determine scoring criteria for performance assessment rating on 3 scales.

4. Check the content validity and analyzed the Index of Item Objective Congruence (IOC) by 3 professional scholar's experts and took the research instrument to try out with 30 freshmen majoring in physical education from Chongqing Vocational College of Media, Chongqing city, China, who were not a sample group to analyzed difficulty value (p) and discrimination power (r) of the multiple-choice test and the reliability of Kuder Richardson's method (KR-20). In addition, checking the quality of confidence values in performance assessment by analysis the reliability by Cronbach's Coefficient Alpha method.

5. Gather information for students, utilize experimental findings, and examine the means ($\bar{X}$), standard deviation (SD.) and t-test for dependent samples.

Conclusion

Using Simpson Instructional Model to improve volleyball skill for undergraduate students and compare students' volleyball skill before and after the implementation based on Simpson Instructional Model. The researchers presented the research results as follow:

1. Using Simpson Instructional Model to improve volleyball skill for undergraduate students. Apply the teaching mode based on Simpson Instructional Model to improve students' volleyball skill in university courses. This study focused solely on the volleyball skill of freshmen. The course was divided into 3 units, volleyball serving skill, volleyball spiking skill and volleyball blocking skill, total 27 hours. The data analyzed the quality of the lesson plans by 3 experts, and the results are shown overall, the suitability of the research objectives has the most suitable. After student have learned according to the lesson plans to improve volleyball skill of undergraduate students with 30 freshmen majoring in physical education from Chongqing Vocational College of Media, Chongqing city, China, the average score before learning was 28.70, the average score after learning was 48.97. The after learning score was found to be higher than the before learning score. It shows that teaching by using Simpson Instructional Model of undergraduate students could improve students' volleyball skill.

2. The comparison of students' volleyball skill before and after the implementation based on Simpson Instructional Model. The result found that volleyball skill score of students after learning higher than before learning statistically significant at the level .01. When considering the results of data analysis classified by content: serving skill, spiking skill, and blocking skill. The result found that volleyball skill score of students after learning higher than before learning statistically significant

at the level .01 for all contents. Therefore, learning by using Simpson Instructional Model could improve students' volleyball skill.

Discussion

The research resulted on using Simpson Instructional Model to improve volleyball skill course on 30 freshmen from Chongqing Vocational College of Media, China. The researcher could be discussed the volleyball skill as follows:

1. The improvement of volleyball skill by using Simpson Instructional Model. The researcher studied documents and related research on Simpson Instructional Model theory from many researchers and synthesized into 7 steps used for 3 lesson plans. The result showed that the quality of the lesson plans by experts was the most suitable. After students had learned the volleyball skill according to the 3 lesson plans, the average score was 48.97 after learning. which was higher than the average score was 28.70 before learning. It's because Simpson Instructional Model emphasized the importance of practice in motor skill learning. In volleyball technical training, a large number of mechanical exercises and practical operation were essential. Through continuous practice, students could consolidate the techniques they had learned and improve the accuracy and proficiency of their movements. At the same time, teachers needed to give timely feedback to students, point out the shortcomings of technical movements, and provide suggestions for improvement. This combination of practice and feedback helped students to quickly correct mistakes and accelerate the process of skills improvement (Cheng Huo, 2022). Consistent with Chen Bingdong (2020), Simpson Instructional Model emphasized the cultivation of adaptability and creativity in the advanced stage. In the teaching of volleyball technology, this meant encouraging students not only to be satisfied with mastering basic movement skills, but also to be able to flexibly use these skills in the game, to react quickly according to the situation of the opponent and changes on the court. In addition, teachers should also stimulate students' creativity and encourage them to try new tactics and combinations in the competition to achieve better results. This teaching method helped to cultivate students' independent thinking ability and innovation ability, so that they could reach a higher level in volleyball technology. According to the research of Wang Chuanwen (2018), in order to prepare for the regional championship, a high school volleyball team adopted Simpson Instructional Model to carry out a one-month special technical improvement training for the players. According to Simpson's motor skill target classification, a set of systematic training plan was designed to comprehensively improve the volleyball

skill level of the players. Training process: Awareness and Preparation (Weeks 1-2): The coach first through video analysis and explanation, let the players understand the basic principle of volleyball technology, movement structure and key points. The introduction of simple technical imitation exercises, such as the basic hand shape and stance of serving and cushion, cultivated the players' initial perception ability. Guided reaction and mechanical exercise phases (Weeks 3-4): The coach offered one-on-one or group guidance to correct the mistakes of the players in the technical movements and ensure that each player could correctly master the basic techniques. The feedback mechanism was introduced in the process of practice. After each practice, the coach and the players evaluated each other and pointed out the improvement direction. This hierarchical training mode helped players to gradually master volleyball skills and gradually improve from basic to advanced. Moreover, Xu Mengjiao (2024) applied the Simpson Instructional Model in university PE. The research objects of the experimental group were 30 students and control group were 30 students. Personalized instruction: Simpson teaching model encouraged coaches to give personalized instruction according to the actual situation of the players to solve their specific problems in technical learning. This teaching method was helpful to give full play to the potential of each team member and improve the overall training effect. The research result proved that Simpson Instructional Model focused on cultivating team members' initiative and creativity, encouraging them to try new techniques and tactics. This teaching method helped to cultivate the independent thinking ability and innovation ability of the players, which laid a foundation for them to achieve excellent results in the competition.

2. The Comparison of students' volleyball skill before and after the implementation based on Simpson Instructional Model. The result found that volleyball skill score of students after learning higher than before learning statistically significant at the level .01. When considering the results of data analysis classified by content: serving skill, spiking skill, and blocking skill. The result found that volleyball skill score of students after learning higher than before learning statistically significant at the level .01 for all contents. Therefore, learning by using Simpson Instructional Model could improve students’ volleyball skill. It’s because Simpson Instructional Model had obvious advantages in volleyball technology improvement, such as clear classification of teaching objectives, the combination of practice and feedback, and stimulated students' initiative and creativity. These advantages helped students to achieve a more comprehensive and in-depth development in volleyball technology. According to the research of Zhou Yufeng (2014) made an experiment on the

improvement of spiking skill in the process of applying Simpson Instructional Model. Experimental group: 35 students with similar volleyball foundation were selected to use Simpson Instructional Model for spiking skill training. Control group: Another 35 students with similar volleyball fundamentals were selected to receive spike training by using traditional teaching methods. According to Simpson Instructional Model, spike skill was trained in stages, from basic hand shape and pace exercises to complex jump and spike movements in tandem. After the training, the students' spiking skill was evaluated again and compared with the pre-test data. The result showed that spiking skill was improved remarkable in the process of applying Simpson Instructional Model. Consistent with research of Zhao Meixia (2016) applied Simpson Instructional Model on volleyball serving technique. Experimental group: 30 students with similar volleyball foundation were selected and trained with Simpson Instructional Model. Control group: Another 30 students with similar volleyball foundation were selected for serving technique training using traditional teaching methods. After the training, the two groups of students were tested again on the service technique, and the same index was recorded and compared with the pre-test data. Volleyball serving skill was improved simply. And consistent with research by Tian Yonggang (2021) made an experiment, and applied Simpson Instructional Model to blocking skill. Experimental group: 30 students with similar volleyball foundation were selected to conduct blocking technique training by using Simpson Instructional Model. Control group: Another 30 students with similar volleyball foundation were selected for blocking technique training by using traditional teaching methods. The teacher evaluated students' blocking techniques, including jump timing, blocking hand type, air judgment and body control. Experimental group: According to Simpson Instructional Model, block technique training was carried out in stages, from basic take-off and landing techniques to complex aerial judgment and coordinated defensive strategies. Control group: Traditional teaching methods were adopted, such as coach demonstration, student imitation, blocking practice in simulated game scenarios. After the training, re-evaluate the students' blocking techniques and compare them with the pre-test data. Simpson Instructional Model had many advantages in improving college students' basketball technical ability, which could help students better grasp and understand basketball technical movements, improve learning effect and learning interest. Moreover also consistent with research by Liao Xibi (2022) stated an empirical study on the effect of Simpson Instructional Model on swimming skill learning. By comparing the performance of the experimental group and the control group in the learning process of swimming skills, this study explored

the influence of Simpson Instructional Model on the improvement of swimming skills. The experiment period was four weeks, and the research objects were beginners and swimmers with a certain foundation. Experimental design: Experimental group: 20 beginners and 10 swimmers with a certain foundation were selected and trained by Simpson Instructional Model. This model emphasized phased learning and feedback mechanisms. Control group: Another 20 beginners and 10 swimmers with a certain foundation were selected and trained by traditional teaching methods. Before the experiment, the basic swimming skills of the two groups of participants were evaluated, including the mastery of basic swimming strokes such as freestyle and breaststroke. The experimental group was trained in stages according to Simpson Instructional Model, three times a week for 90 minutes each time. The control group was trained according to traditional teaching methods, with the same frequency and duration as the experimental group. After the experiment, the two groups of participants were tested for swimming skills to evaluate the improvement of their skills. Simpson Instructional Model can effectively improve the skill level of swimming participants through phased and targeted training methods. For swimming teaching, this model is a teaching method worth popularizing and applying.

In summary, the Simpson Instructional Model can effectively improve the skill level of various sports through the step-by-step and targeted training method. This teaching method is beneficial to let each player in the team play their best and improve the overall training effect. In addition, cultivating the initiative and creativity of team members, encouraging them to try new techniques and strategies, increase players' independent thinking, after the implementation of Simpson Instructional Model, students’ volleyball skill improved remarkably.

Recommendations

General Recommendation

Simpson Instructional Model emphasizes on learning by step. In every technical practice:

1. Teachers should keep a keen observation, catch the highlights and shortcomings of students' technical movements, and immediately give preliminary guidance or tips. so that they can adjust in time in the next practice and avoid forming bad habits.

2. After students have just completed an action or set of exercises, their muscle memory and mental state are at their most active stage. Therefore, teachers should be giving feedback at this time, students are able to remember the coach's

instructions more clearly and adjust quickly in the following exercises and should be strengthened for students with slow progress, and more difficult exercises should be introduced for students with better mastery.

3. Teachers should be conducting regular technical assessment, the details of the students' technical movements, the quality of completion and the speed of progress were recorded by means of the combination of quantitative scoring and qualitative observation.

Suggestions for the Future Research

1. Integrating Simpson Instructional Model with other teaching methods, which is very important in the process of responding and adapting to the complex teaching model for students.

2. Comparing the results of using Simpson Instructional Model between the experimental group and the control group to develop volleyball skills of students.

3. Studying the management model of volleyball competition using Simpson Instructional Model for students.

References

Anbuselvan, S. (2018). The Connotation Analysis and Strategy Research of Structured Movement Skill Teaching in Physical Education. **Elementary Education 18** (03) 87-88.

Andrade, H. G. (2000). **Using rubrics to promote thinking and learning**. Educational Leadership, 57(5), 13–18.

Chen Bingdong. (2020). Discussion on Influencing Factors and Relevant Countermeasures of Volleyball Service Technique. **Quality and Market 2**(03), 67-69.

Chen Feng. (2018). A Study on Sports Injuries and Social Determinants. **Journal of the Taiwan Medical Association,** 10 (01), 767-772.

Cheng Huo. (2022). Analysis on the Training and Improvement of Volleyball Service Technique. **Sporting and Technology 3**(05), 44-46.

Chinese Ministry of Education. (2019). **Physical Health Standards for Chinese College Students,** (2), 40-51.

Chinese Volleyball Association. (2018). **Scoring Standards for Volleyball Skills Testing of Chinese College Students, 2018**(2), 19.

Dai Songsong. (2019). Actual Combat Training of Volleyball Blocking Technique in Secondary Vocational Sports. **Journal of Jiamusi Vocational College** (08), 267-268.

Dawson, P. (2017). Assessment rubrics: Towards clearer and more replicable design, research and practice. **Assessment and Evaluation in Higher Education, 42**(3), 347-360.

Duan Huixiong. (2019). Actual Combat Training of Volleyball Blocking Technique. **Scientific Advice (Education and Research)** (11),25.

Gao Zejin. (2017). Experimental Research on the Application of PBL Teaching Method in Volleyball Frontal Two-handed Cushion Technique Teaching. **Journal of Beijing Sport University** (3), 69-81.

General Administration of Sport of China. (2023). **National Fitness Plan,** (2), 2-11.

Gulikers, J. T., Bastiaens, T. J., & Kirschner, P. A. (2004). A five-dimensional framework for authentic assessment. **Educational Technology Research and Development, 52**(3), 67.

Guo Ping. (2015). **The Teaching of Sports Movement Skills in Colleges and Universities**. Higher Education, (3), 99-101.

Hao Shifeng. (2019). **Exploring the Application of Competition Teaching Method in Volleyball Class in Universities,** Contemporary Sports Science and Technology, (07), 23-25.

Hu Haiying. (2019). Progress in Research on Motor Skill Learning. **Social Sciences**, (3), 88-90.

Huang Xinyun (2015). Research on the Application of Simpson Instructional Method in Volleyball General Course of Physical Education. **Fujian Normal University Press.**

Jiao Siyu. (2022). **The Not Equal Level Man Volleyball Athlete in Colleges and Universities in Stu Jump Blocking Technique Lower Limb Biomechanical Characteristics of the Comparative Analysis.** Inner Mongolia Normal University Press.

Jing Xiaowei, Mu Yingxiu & Zhu Guihua. (2019). **Research on Landing Movements of Volleyball Spiking and Blocking Techniques.** Contemporary Sports Science and Technology (14), 26-27.

Li Shun. (2017). A Brief Discussion on the Teaching Practice of Improving Volleyball Blocking Technique in Vocational Colleges. **Educational Modernization** (42), 237-238.

Li Zengming. (2015). On Feedback of Action Skills in Physical Education Teaching. **Social Sciences 2015**(05),128-130.

Li Zhong & Wan Qiangdong. (2019). Research on the Application of Open Motor Skill Learning Principle in Volleyball Blocking Teaching. **Sports Fashion** (12), 284.

Liang Kai. (2016). Some Thoughts on Volleyball Blocking Technology. **Secondary School Curriculum Guidance (Teacher Newsletter),** (13), 65.

Liao Xibi. (2022). Research on the Application of the Law of Sports Skill. **College Physical Education Training,** (07), 103-106.

Liu Dehui & Song Shuhai. (2017). Training Analysis of Blocking Technique in Volleyball Match. **World of Sports (Academic Edition)** (02),62-63.

Liu Jian. (2009). On the Impact of Classical Learning Theory on the Traditional Teaching Model of "Teacher centered". **Journal of Hunan Medical University,** (4), 187-190.

Liu Minghao & Wang Wujie. (2021). Research on the Characteristics of Volleyball Service Technique in Physical Education. **Innovation Research on Ice and Snow Sports 2**(11), 61-62.

Liu Wei, et al. (2016). Research on the Important Role of Serving Technique in Modern Volleyball Match. **Journal of Jiamusi Vocational College, 5**(07), 288.

Liu Yanchen & Li Peng. (2024). Using Multimedia Technology to Improve the Teaching Effectiveness of Volleyball Spiking Technology. **Shanxi Education (Teaching) 4**(02), 93-94.

Lu Yanqi. (2019). Emphasis on the Standardization of Movement Skills in Physical Education Teaching. **Sports Storm,** (03), 68-72.

Ma Miaomiao & Gao Bo. (2018). Analysis on the Application of Serving Technique in Volleyball Match in Linyi University. **World of Sports (Academic Edition)** (08), 109-110.

Ma Yingyi. (2022). Research on the Influence of Sports Action Skill. **Social Science,** (05), 128-130.

Mao Zhenming. (2015). **Physical Education Teaching Theory.** Higher Education Press.

Miao Miao & Li Zhen. (2013). On the Technical Principle of Volleyball Blocking Take-off Action. **Intelligence** (29), 355.

Nkhoma, M., Thomas, S., & Le, N. Q. (2020). The Role of Rubrics in Learning and Implementation of Authentic Assessment: A Literature Review. **InSITE 2020: Informing Science + IT Education Conferences:** Online. Informing Science Institute.

Pradeep, I. (2020). Emphasis on the Standardization of Movement Skills in Physical Education Teaching. **Higher Education**, (05), 71-73.

Roediger & Marsh. (2005). The positive and negative consequences of multiple-choice testing. **Journal of experimental psychology. Learning, memory and cognition, 31**(5), 9-11.

Salwa, A. (2012). **The Validity, Reliability, Level of Difficulty and Appropriateness of the Appropriateness of Curriculum of the English Test (A Comparative Study of the Quality of English Final Test of the First Semester Students Grade V Made By English KKG of Ministry of Education and Culture and Ministry of Religion Semarang,** Doctoral dissertation, Diponegoro University, Indonesia.

Shen Zhiwei. (2024). **Analysis of Blocking Technique in High School Volleyball Teaching and Discussion on Training Methods.** College Entrance Examination (10),174-176.

Shi Hongyu. (2018). Experimental Research on Simpson Instructional Model in Volleyball Teaching of Guangzhou Sport University. **Journal of Guangzhou Sport University Press.**

Simpson, E. J. (1972). **Taxonomy of Educational Objectives**. University of Minnesota Press.

Sun Wenqi. (2020). Research on the Application Effect of Simpson Instructional Model in the Teaching of Physical Education Elective Courses in Vocational Colleges. Taking Volleyball Elective Teaching as an Example. **Fujian Sports Science and Technology, 32** (02), 53-55.

Tang Jianggen, Shi Xiangping & Xu Peng. (2008). Experimental Research on the Application of Geometric Model in Volleyball Spike Teaching. **Journal of Capital Institute of Physical Education** (06), 80-82.

Tang Jingen. (2008). Experimental Research on the Application of Geometric Model in Volleyball Spike Technique Teaching. **Journal of Nanjing Institute of Sport (Natural Science Edition)** (3), 68-71.

Tang Yunqi. (2013). A Brief Discussion on the Teaching and Training Methods of Volleyball Spike Technique. **Science Tribune (in the ten-day)** (14),141-189.

The Ministry of Education of the People's Republic of China. (2023). Guidelines for Physical Education Courses at Colleges and Universities in China.

Tian Yonggang. (2021). Discussion on Influencing Factors of Volleyball Spike Technique. **Sporting Goods and Technology 5**(09), 27-28.

Wang Chuanlong. (2018). Research on Volleyball Service Receiving Technique Training. **Contemporary Sports Science and Technology, 4**(23), 12-14.

Wang Lu. (2020). **Analysis of the problems and countermeasures in volleyball physical fitness training. Contemporary Sports Science and Technology.** North University of China Press.

Wang Tao & Xu Kan. (2019). Teaching Sports Action Skills Based on Physical Cognition. **Social Science, 7**(02), 30-48.

Wang Xuan. (2013). **Case Teaching Volleyball Adjustment Storm Blocking Technology Library Establishment and Application of Research.** Beijing Sports University Press.

Wang Zhao. (2018). **Research on the Application of PBL Teaching Method in the Teaching of General Volleyball Serving.** Shanxi Normal University Press.

Wei Zhengzheng. (2020). Research on the Construction of Evaluation Index System for the Development of Campus Volleyball Sports in Ordinary Higher Education Institutions. **Contemporary Sports Technology, 5**(17) 50-53.

Wu Ping. (2020). The Influence of the Types of Action Demonstration in Physical Education Teaching on Students' Action Skills and Cognitive Understanding. **Sports Fashion, 10**(02), 46-48.

Wu Zhizheng. (2022). **Mobile Block Movement Kinematics Analysis of Young Volleyball Players.** Tianjin Sports College Press.

Xu Mengjiao. (2024). **Collaborative optimization study of space and time on Men's Volleyball Jump Serving Technology.** Qufu Normal University Press.

Xu Wenchao. & Cheng Yu. (2018). Development of Volleyball Service Technique and Teaching and Training Methods. **Comparative Research on Cultural Innovation, 5**(32), 183-185.

Yang Jianbin. (2018). Actual Combat Training of Modern Volleyball Blocking Technique. **Contemporary Sports Science and Technology** (33),48-50.

Yang Jianrui. (2022). Research on the Teaching of Volleyball Skills in Universities through Autonomous Cooperative Exploration. **Sports Fashion, 7**(06), 270-300.

Yang Siyuan. (2021). Exploration and Practical Application of Ideological and Political Elements in Volleyball Curriculum. **Contemporary Sports Science and Technology, 11**(28), 80-93.

Ye Qing & Li Ming. (2015). Example analysis of the comparison between traditional teaching and Flipped classroom in colleges and universities. **Introduction to E-commerce, 4**(04), 46-51.

Yu Yang. (2014). Teaching Skills of Volleyball Spike Technique. **Chinese School Physical Education,** (02), 52-53.

Zhai Xinxin. (2017). **Application of Receiving Technique in Volleyball Match. Sports,** (14), 26.

Zhang Hailong. (2015). Application of PBL Teaching Method in Fermentation Engineering Course Teaching. **Microbiology Bulletin, 42**(11), 2251-2254.

Zhang Ruifei. (2022). Experimental Research on Simpson Instructional Model in the Teaching of Volleyball General Course. Beijing Sport University Press.

Zhao Meixia. (2016). Analysis and Research on Volleyball Spike Technology. **Modernization of Education, 3** (21), 155-157.

Zhao Qiwu & Dong Haiwen. (2018). Analysis of Influencing Factors and Countermeasures of Volleyball Service Technique. **Intelligence, 3**(35), 219.

Zhao Yang. (2017). Video Image Correction Simulation of Volleyball Serving Technique Path. **Computer Simulation, 4**(11), 240-243.

Zhong Yanfen. (2015). The Application of PBL Teaching Model in the Teaching of "Housing Architecture" Course. **Science and Education Guide, 5**(09), 128-130

Zhou Yufeng. (2014). Analysis on Volleyball Spike Technique. **Journal of Mudanjiang University of Education** (08),123-124.

Zhou Yufeng. (2017). Research on the Training of Blocking Technique in Volleyball Match. **Journal of Jiamusi Vocational College,** (08), 399.

Zhou Yunfeng. (2021). Discussion on Spiking Technique and Blocking Technique of College Volleyball Players. **The Road to Success,** (33), 123-125.

Appendixes

Appendix A
List of Specialists and Letters of Specialists Invitation for IOC Verification

List of Specialists and Letters of Specialists Invitation for IOC Verification

Name of Experts

1. Assistant Professor Dr.Wasan Dueanchaeng
   Ph.D., Program in Research and Statistics in Cognitive Science

2. Assistant Professor Dr.Kannika Bhiromrat
   Ph.D., Program in Technical Pedagogic Research and Development

3. Associate Professor Dr.Tianhong Gao
   Ph.D.,Program in Sports training

Appendix B
Official Letter

Ref.No. MHESI 0643.14/1646

Bansomdejchaopraya
Rajabhat University
1061 Itsaraparb Hirunrujee
Thonburi Bangkok 10600

27 December 2023

RE: Invitation to validate research instrument

Dear Assistant Professor Dr.Wasan Dueancjaeng

Mr.Wang Yang is a graduate student in Master of Education Program in Curriculum and Instruction of Bansomdejchaopraya Rajabhat University. He is undertaking research entitled "Using Simpson Instructional Model to Improve Volleyball Skill of Undergraduate Students"

The thesis adversity committee has considered that you are an expert in this topic. Your recommendations would be useful for further improvement of this research instrument.

We respectfully request your assistance in validating a research instrument that is attached to this message. We would be grateful for any help you can provide in this matter. We would like to express our sincere appreciation for your time and expertise. If you have any questions or concerns, please do not hesitate to contact Mr.Wang Yang at 31792313@qq.com

Thank you for considering our request.

Sincerely,

Nainapas I.

(Dr.Nainapas Injoungjirakit)
Vice Dean, For Dean of the Graduate School

Bansomdejchaopraya Rajabhat University
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Ref.No. MHESI 0643.14/1647

Bansomdejchaopraya
Rajabhat University
1061 Itsaraparb Hirunrujee
Thonburi Bangkok 10600

27 December 2023

RE: Invitation to validate research instrument

Dear Assistant Professor Dr.Kannika Bhiromrat

Mr.Wang Yang is a graduate student in Master of Education Program in Curriculum and Instruction of Bansomdejchaopraya Rajabhat University. He is undertaking research entitled "Using Simpson Instructional Model to Improve Volleyball Skill of Undergraduate Students"

The thesis adversity committee has considered that you are an expert in this topic. Your recommendations would be useful for further improvement of this research instrument.

We respectfully request your assistance in validating a research instrument that is attached to this message. We would be grateful for any help you can provide in this matter. We would like to express our sincere appreciation for your time and expertise. If you have any questions or concerns, please do not hesitate to contact Mr.Wang Yang at 31792313@qq.com

Thank you for considering our request.

Sincerely,

(Dr.Nainapas Injoungjirakit)
Vice Dean, For Dean of the Graduate School

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Ref.No. MHESI 0643.14/1648

Bansomdejchaopraya
Rajabhat University
1061 Itsaraparb Hirunrujee
Thonburi Bangkok 10600

27 December 2023

RE: Invitation to validate research instrument

Dear Assistant Professor Dr.Tianhong Gao

Mr.Wang Yang is a graduate student in Master of Education Program in Curriculum and Instruction of Bansomdejchaopraya Rajabhat University. He is undertaking research entitled "Using Simpson Instructional Model to Improve Volleyball Skill of Undergraduate Students"

The thesis adversity committee has considered that you are an expert in this topic. Your recommendations would be useful for further improvement of this research instrument.

We respectfully request your assistance in validating a research instrument that is attached to this message. We would be grateful for any help you can provide in this matter. We would like to express our sincere appreciation for your time and expertise. If you have any questions or concerns, please do not hesitate to contact Mr.Wang Yang at 31792313@qq.com

Thank you for considering our request.

Sincerely,

(Dr.Nainapas Injoungjirakit)
Vice Dean, For Dean of the Graduate School

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Appendix C
Research Instruments

Lesson Plan I

Content

Volleyball serving skill

Objective of Learning

1. Students understand concept of volleyball serving skills. (K)
2. Students can serve volleyball down at the point. (P)

Main ideas/concepts

Volleyball is a highly technical and competitive sport. Serving is a crucial technique in volleyball match. An excellent serving technique can create pressure in the game, master the rhythm of the game and strive for the offensive advantage for the team. Serving is an important part of volleyball technique. It can not only change the direction of serving, but also change the strength and speed of serving. For high-level athletes, serving is one of the important means of scoring. Therefore, the mastery of serving technique has been paid more and more attention. For beginners, it takes some time to master the serving technique. This is because beginners are not very proficient in serving skills and have not mastered the correct movements. In the meantime, we should start with the simplest and most basic serving. If you can't master the correct serve technique, it will be difficult to learn other technical moves. Therefore, how to effectively train and evaluate the volleyball serve technique has become the focus of coaches and athletes.

Introduction

Introducing the learning objectives of volleyball serving technique, the teacher first introduces the contents of Simpson Instructional Model and expounds in detail the significance and application of Simpson Instructional Model in seven stages of volleyball serving: 1) perception, 2) preparation, 3) guided response, 4) mechanism, 5) complex response, 6) adaptation, 7) creation.

Learning content

The teacher explains the concept of volleyball serving: 1) The importance of volleyball serving; 2) Basic rules of volleyball serving; 3) Classification of volleyball serving; 4) Common methods of volleyball serving; 5) The technical essentials of volleyball serving, so that students have a certain understanding of serve technique:

1. The importance of volleyball serving

Serving is a highly technical skill. If you want to give full play to it, you must go through long-term training and practice to master it. If you don't pay attention to the serving, you will often make a big mistake. In the game, it often happens that the server's action is not standardized when serving, and the student does not return to his own half in time after serving, which directly affects the attack of his own players; Or in order to strengthen the strength, increase the attack power and increase the difficulty of the server, the server deliberately serves the high ball and causes mistakes which will affect the game. In addition, serving failure has a great psychological impact on team members. Serving mistakes will not only make the team members lose confidence and courage, cause impatience, but also make the opposing team members take the opportunity to score. Therefore, it is very important to improve the serving quality of volleyball match. In order to give play to one's own level in the competition and strive for initiative and victory, students must attach importance to and strengthen the training of serving skills.

2. Basic rules of volleyball serving

1) A clear purpose. Serving is a very important technique, which directly affects the outcome of the whole game. Therefore, in the preparation stage, teachers should carefully analyze the purpose, significance and tactical requirements of the game, and do a good job in serving skills training and psychological preparation.

2) Correct movement techniques. When serving, students should: ① stand naturally and comfortably; ② the arm movements should be coordinated correctly; ③ the grip should be reasonable; ④ throw the ball correctly.

3) Serving skills should be comprehensive. In the serving area, the following points must be achieved: ① the ball should be placed properly; ② when serving, students should stand in front of the feet, arms droop naturally, the body weight is placed between feet, and eyes are on the ball; ③ the throwing position should be appropriate; ④ when throwing the ball, the arm should be consistent with the hitting position and body center of gravity.

4) Serve must have a good rhythm. When serving, students should master the time and rhythm to make the serving more continuous and changeable. Generally speaking, the tee is long, fast-paced and varied.

5) Have a strong sense of attack when serving, mobilize opponents through serving, and strive for initiative.

3. Classification of volleyball serving

In the competition, according to different competition requirements, the serving techniques used are different. According to the principles and methods of serving, it can be divided into the following types:

1) Jump serving: When serving, turn back and down with a hand or wrist, and then swing up to make the ball fly from high to low.

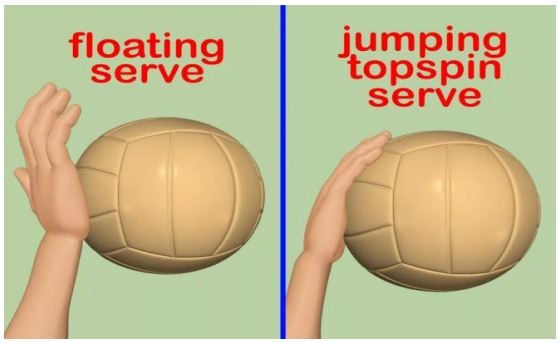
2) Throwing method: When serving, put the ball in a hand first, and then throw the ball from top to bottom. In order to strengthen the rotation and strength, the height of the ball is generally higher than the normal ball.

3) Friction serving: When serving, rub the ball with a small area of fingers and palms.

4) Throw-serve combination: Throw the ball into the air with the coordinated force of forearm, wrist and finger, and control the ball with finger, palm and forearm. This is one of the most common ways to serving.

5) Throw-serve combination: Generally, serve with low height and small arc is used to receive the serve.

6) The combination of jump serving: First, the combination of jump serve and friction serve; Second, the serving is received by a combination of jump serving and friction serving; Third, the combination of jump serve and friction serve is used to pass and defend one after another; Fourth, use jump serving and friction serving to receive the serve; Fifth, the serving is received by a combination of jump serving and friction serving.



4. Common methods of volleyball serving

1) Drift serving: Straight serve is one of the most common serve techniques. The main purpose of a player's serving is to make the ball pass through the opponent's receiving lineup in a straight line, which makes it difficult for the receiver to judge the landing point and direction of the ball. The characteristics of straight serve are that the rotation of the ball is small, the flight trajectory is relatively stable, and it is difficult for the opponent to catch the ball.

2) Topspin serving: Topspin is a powerful serve technique. When serving, the player makes the ball fly along an arc by hitting and spinning. The feature of Topspin serving is that the ball will appear a downward curve after a period of time, which increases the difficulty of receiving the serving. This serving technique requires the players to have good strength and skills, and can accurately control the rotation and flight trajectory of the ball.

3) Jump serving: Slant serve is a serving technique that requires high strength and skill. When serving, athletes take off to give the ball greater speed and curve through strength and rotation, and make the ball fly diagonally. Oblique serve is characterized by fast ball speed and large flight trajectory curve, which makes it difficult for opponents to receive the serve. This serving technique requires players to have good explosive power and skills, and can accurately control the rotation and direction of the ball.

4) Jumping and drifting: Fast throw is a variable-speed serve technique. When serving, the player throws the ball to make it fly faster, but rotate less. Fast throwing is characterized by high speed and less rotation, which makes it more difficult for opponents to catch the ball. This serving technique requires players to have faster arm speed and accurate ball control ability.

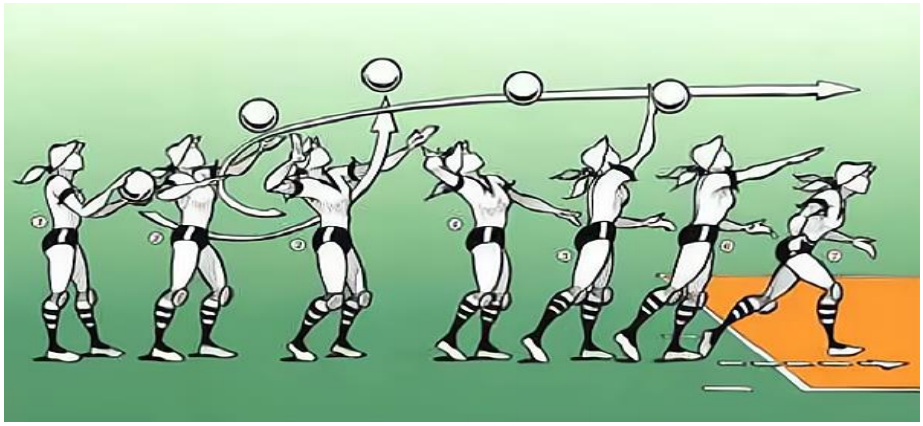
5. The technical essentials of volleyball serving.

1) When throwing the ball, students should choose the appropriate height and throwing point. Generally, 20-25 cm is appropriate. When hitting the ball, the upper arm is raised horizontally forward, the forearm swings upward and rotates outward, so that the racket faces upward, the wrist is slightly retracted, and the ball is hit forward and upward.

2) When serving, students should lift the racket over the head and keep eyes on the opponent's court. For easy observation, the left hand can be naturally placed in front of the right side of the body.

3) When serving, the racket should face the direction of the ball and the left hand should be clamped from outside to inside. When the finger touches the ball, the racket rotates around the wrist and forms a certain angle and rotation with the incoming ball. At the moment of hitting the ball, swing the arm up and hit the ball with fingers.

4) The serving point is usually near the two corners of the opponent's court. When serving, students should pay attention to make the ball throw higher and farther, and throw it lightly on the opponent's court.



Learning activities

The application of Simpson's seven steps in volleyball serving teaching.

Step 1 Perception

The ability to use sensory cues to guide sports activities. This includes sensory stimulation, clue selection and serving awareness, cultivating students' sensory awareness of volleyball serving from the sensory level.

Step 2 Preparation

Readiness to act. It includes mental, physical, and emotional sets. These three sets are dispositions that predetermine a person's response to different situations.

Take students to the actual volleyball court and let them experience volleyball. Teachers can organize students to carry out on-the-spot training and competitions, so that they can feel the charm of volleyball and gradually become familiar with and master the rules and skills.

Step 3 Guided response

The early stages in learning a complex skill includes imitation, trial and error. Adequacy of performance is achieved by practicing.

1) Teachers guide students to do jogging, stretching and other warm-up activities to ensure that students' physical functions are active.

2) Teachers organize students to practice volleyball serving in groups of four, and ask students to observe and imitate the basic movements.

3) Students practice serving skills for each type of volleyball: (1) Float serving, (2) Topspin serving, (3) Jump serving, (4) Jump float serving, and (5) Friction serving

4) Teacher gives suggestions to correct errors in the student's volleyball serving.

5) The teacher selected several students to perform demonstrations to stimulate other students' learning motivation.

6) The teacher selected several students to perform demonstrations to stimulate other students' learning motivation.

Step 4 Mechanism

This is the intermediate stage in learning a complex skill. Learning responses has become habitual movements with some confidence and proficiency. After learning and practicing the contents of volleyball serving, students think that the action of serving is as follows:

1) Increase the weight of the ball before serving. This method can make beginners more familiar with the serving technique, thus making them more proficient in the serving technique.

2) Improve the technical level of beginners by increasing the difficulty of serving. For example, teachers can add a more difficult ball in training and use different serving methods to increase beginners' understanding of different serving methods.

3) Change the mood and mental state of beginners in various ways. For example, add some interesting activities in practice to make it more exciting, thus improving beginners' interest in practice.

4) Master all kinds of serve techniques more skillfully. "Guidance" can be used to improve beginners' understanding and knowledge of serving technique, therefore improving their learning efficiency.

5) Focus on the mechanical action training of different technical actions in volleyball match. For example, some group exercises or confrontation exercises can be carried out to improve athletes' understanding of the characteristics and application methods of different technical movements. Through this stage of training, beginners can have a deeper and more comprehensive understanding of the serving technique, so as to master the technical movements more skillfully.

Step 5 Complex response

The skillful performance of motor acts that involve complex movement patterns. Proficiency is indicated by a quick, accurate, and highly coordinated performance. This category includes performing without hesitation, and automatic performance.

Explicit reaction can reflect whether students have mastered the serving technique. When practicing serving, teachers must pay attention to improving physical fitness and basic skills. Only by improving physical fitness and basic skills, can students better master the serving technique. But be careful not to pursue speed and strength. For beginners, it is best not to imitate the serving of high-level athletes. Because it is easy to make mistakes in imitation, it is not conducive to beginners to improve their serving skills.

Step 6 Adaptation

Skills are well developed and the individual can modify movement patterns to fit special requirements.

1) Demonstrates different types of volleyball serving. Ask the students to learn and play the serving clips again.

2) Select students who still lack serving skills to practice repeatedly to further adapt. Students will serve better when they practice adaptation over and over again when serving volleyball.

Step 7 Creation

Creating new movement patterns to fit a particular situation or specific problem. Learning outcomes emphasize creativity based upon highly developed skills.

1) Teachers comprehensively evaluate students' volleyball serving skills and give corresponding feedback. Guiding conclusions can help students understand their technical level and shortcomings, and provide guidance for further study.

2) Students constantly improve their learning methods and strategies through evaluation and summary, so as to improve their learning effect and efficiency.

3) Teachers organize students to make concluding remarks, and let students share their gains and feelings in volleyball serving techniques.

4) According to the teacher's suggestion, the students practice the volleyball serve technique again and innovate appropriately.

Measurement and evaluation

1. Observe student’s performance in training and competition, and evaluate their mastery of volleyball serving skills.

2. Design group exercises to evaluate student’s serving ability.

3. Organize individual or group presentations of students and evaluate their performance in serving.

4. Observe student’s understanding and application of the danger of volleyball serving in class discussion and summary.

Teaching media

Volleyball courts and equipment, including volleyball, nets and venue signs. The video of volleyball match is used to watch and analyze the skills and tactics of the match.

Learning schedule: Volleyball serving skill (9 hours)

Date/time	Teaching Process	Time
Day 1 09.00-09.20	**Introduction** Introducing the learning objectives of volleyball serving technique, the teacher first introduces the contents of Simpson Instructional Model, and expounds in detail the significance and application of Simpson Instructional Model in seven stages of volleyball serving	20 minutes
09.20-10.20	**Learning content** 1) The importance of volleyball serving; 2) Basic rules of volleyball serving; 3) Classification of volleyball serving; 4) Common methods of volleyball serving; 5) The technical essentials of volleyball serving,	1 hour
10.20-12.00	**Learning activities:** Simpson Instruction Model in seven stages of volleyball serving: **Step 1 Perception:** Sensory stimulation, clue selection and serving awareness, cultivating student's sensory awareness of volleyball serving from the sensory level. **Step 2 Preparation:** Take students to the actual volleyball court and let them experience volleyball. **Step 3 Guided response:** Students do joggings and practice volleyball serving in groups of four, and practice serving skills: (1) Float serving, (2) Topspin serving, (3) Jump serving, (4) Jump float serving, and (5) Friction serving. After practicing, teacher gives suggestions to correct errors in the student's volleyball serving.	1 hour and 40 minutes
12.00-13.00	**Lunch Time**	
13.00-15.00	**Step 4 Mechanism:** This is the intermediate stage in learning a complex skill. After learning and practicing the contents of volleyball serving, students think that the action of serving is as follows: 1) Increase the weight of the ball before serving. 2) Improve the technical level of beginners by increasing the difficulty of serving.	2 hours
	After class, the students line up to relax their muscles, and the teacher explains the next steps.	

Date/time	Teaching Process	Time
Day 2 09.00-10.00	Students to do warm up by jogging around the volleyball court and practice serving skills in groups of four.	1 hour
10.00-11.30	**Learning activities:** Simpson Instructional Model includes seven stages of volleyball serving: (continue) **Step 5 Complex response:** The skillful performance of motor acts that involve complex movement patterns. When practicing serving, students must pay attention to improving physical fitness and basic skills. **Step 6 Adaptation:** Skills are well developed and the individual can modify movement patterns to fit special requirements. Students will serve better when they practice adaptation over and over again when serving volleyball.	1 hour and 30 minutes
11.30-13.00	**Lunch Time**	
13.00-14.30	**Step 7 Creation:** Creating new movement patterns to fit a particular situation or specific problem. Learning outcomes emphasizes creativity based upon highly developed skills. Students practice the volleyball serving technique again and innovate appropriately.	1 hour and 30 minutes
	After class, the students line up to relax their muscles, and the teacher explains the next learning content.	

Lesson Plan II

Content

Volleyball spiking skill

Objective of Learning

1. Students understand the concept of volleyball spike skill. (K)
2. Students can prepare posture of volleyball spike. (P)
3. Students can spike the volleyball. (P)

Main ideas/concepts

Volleyball is a highly technical team sport. Volleyball spike technique refers to the technique that athletes use their whole-body strength, speed and skills to throw the ball from the air to the opponent's court. Spike is an important scoring method in volleyball competition, and it is also the technique that scores the most in the competition. Therefore, the spike technique is one of the most important and basic techniques in the volleyball match. Spike techniques mainly include one-handed and two-handed, one-handed passing and two-handed passing. An excellent spike technique can give the team an advantage in the game and improve the defensive stability and offensive efficiency in the team. Therefore, how to effectively train and evaluate the volleyball spike technique has become the focus of teachers and students.

Introduction

The teacher first introduces the contents of Simpson Instructional Model, and expounds in detail the significance and application of Simpson Instructional Model in seven stages of volleyball Spike Technique: 1) perception, 2) preparation, 3) guided response, 4) mechanism, 5) complex response, 6) adaptation, 7) creation. The details are as follows:

Learning content

The teacher explains the concept of volleyball spike: 1) Volleyball spike technique; 2) The preparation posture of volleyball spike technique; 3) Volleyball spike skills; 4) Simulation practice.

1. Volleyball spike technique refers to the technique of throwing the ball from the air to the opponent's court by using the whole body's strength, speed and skills.

Spike is an important scoring method in volleyball competition, and it is also the technique that scores the most in the competition. Therefore, the spike technique is one of the most important and basic techniques in volleyball. Spike techniques mainly include one-handed and two-handed, one-handed passing and two-handed passing. Spike is one of the most important scoring methods in volleyball match. An accurate and powerful spike can break through the opponent's defense and create scoring opportunities. The accuracy and strength of spiking directly affect the speed and angle of the ball, and determine the impact point of the ball and the difficulty of the opponent's defense. Therefore, the spike technique directly affects the team's offensive effect and game results. Through the strength and speed of spiking, it can cause pressure and trouble to the opponent. A powerful spike can not only score points, but also deter the opponent's defense, cause confusion and mistakes when the opponent receives and passes the ball. The strength and accuracy of spiking can strengthen the team's attack power and win more scoring opportunities for the team. The spike technique determines whether the team can master the rhythm of the game. An accurate spike can quickly transfer the rhythm of the game to one's own side and increase the offensive ability of the team. At the same time, the accuracy and strength of spiking can also force the other side to adjust its defensive strategy, make the pace of the game more beneficial to itself. A successful spike can not only win points for the team, but also boost the team's morale and confidence. A successful spike can bring a strong impact and satisfaction to the team and the audience, increase the confidence and fighting spirit of the team and improve the competitive state of the team.

Spiking is a skill that requires teamwork. The success of spiking is inseparable from the tacit cooperation between passing and passing. The initiator of the spike needs to accurately judge the position and quality of the pass, while the target receiver of the spike needs to accurately understand and grasp the intention and strength of the spike. Through spiking training and competition, teamwork ability and tacit understanding can be enhanced.

2. The preparation posture of volleyball spike skill

1) Preparation posture: Before spiking, players should take appropriate preparation posture. Feet are shoulder-width apart and slightly bent to maintain balance and stability. Hands in front of the body, and get ready to catch and smash.

2) Keep the arms straight and the palms open. Players should touch the ball with the palms and fingertips of their hands, and use the strength and skills of their hands to give the ball rotation and strength.

3) When the spiker is ready to take off, the feet should be about shoulder width, the left foot is in front, the right foot is behind, and the heel is slightly raised. Lift the arms to the side, straighten the left arm, bend the right arm 90, and place it at one side. Turn the upper body slightly to the left and lean forward about 45. Knees slightly bent.

4) When preparing posture, all parts of the body should have a large range of activities and full extension. The weight of the whole body is transferred to the left foot, the upper body turns left and leans forward slightly, and the left foot stretches forward slightly.

5) After kicking the legs, turn the hips quickly, tilt the upper body backward to the left, and swing the arms back and forth quickly. At the same time, the center of gravity moves forward to the right foot and turns right, and the arms are lifted forward and left from the back.

6) The key to preparing posture is to appropriately increase the upper body to lean forward. Only in the correct preparation position, can the spike play the best hitting effect.

The following points should also be noted in the preparation posture:

① Don't move into position before spiking.

② When taking off, the strength of legs should be enough to increase the jumping height.

After taking off, the student should push the ground quickly and turn around to rotate the body to the maximum and fully extend it to increase the jumping height.

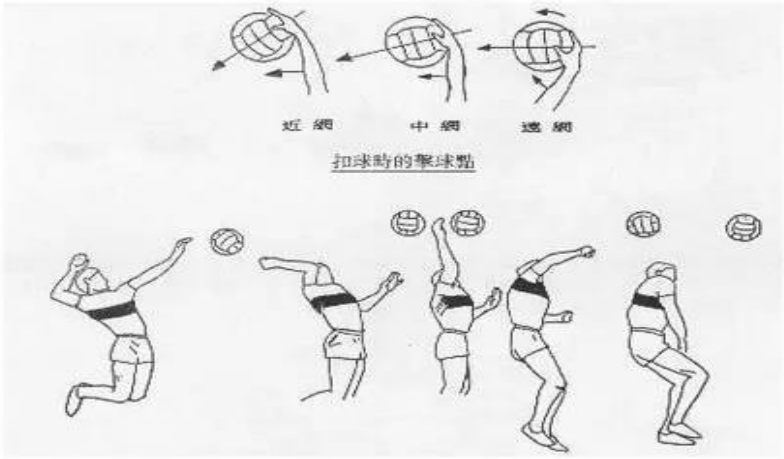
3. Volleyball spike skills:

1) Take off in situ

Taking off in situ is the basic technique of spike. After preparing for posture and running-up, students will naturally open their arms, keep their eyes on the front, put their feet together or touch the ground with their front feet. During the run-up, the right foot first lands on the ground in front of the sole of the foot, and the toes slightly turn outwards; Then push the heel to the ground and lift the front foot off the ground. When hitting the ball, the forefoot is slightly buckled inward and the knee is slightly bent.

There are two basic ways to take off in place: One is to take off from the back to the front; The other is to jump forward from the side. According to the distance, strength, speed of spike and the physical quality of athletes, in-situ take-off can be divided into side take-off and back take-off

Side take-off: The take-off of athletes from back to front mainly includes: Rotate backward by 45 or 60; Turn from front to top, lift your legs and take off with the hind feet; The method is the same as the side take-off. The main points of the two take-off techniques are: keep the body upright, open the arms naturally, rotate the forearms inward and bend the elbows.



③ Run-up and take-off

Run-up and take-off is the most important link in spike technique. Run-up and take-off technology includes three links: run-up take-off, accelerated take-off and landing take-off. Among them, accelerating take-off is the key of spike technique and plays a very important role in spike. The correctness of the catch not only affects the spike technique, but also has an important influence on improving the success rate and speed of spike.

Run-up distance and speed: Athletes should give full play to their physical fitness and have enough strength and speed to complete the whole run-up process. In training, athletes' run-up distance is generally required to be 50-100 meters and

the speed is 20-30 meters per second. In the competition, because of the different technical and tactical levels of athletes from both sides, they often use different run-up distances and speeds.

Acceleration method: When athletes smash and take off, they generally adopt two methods: linear acceleration method and arc acceleration method.

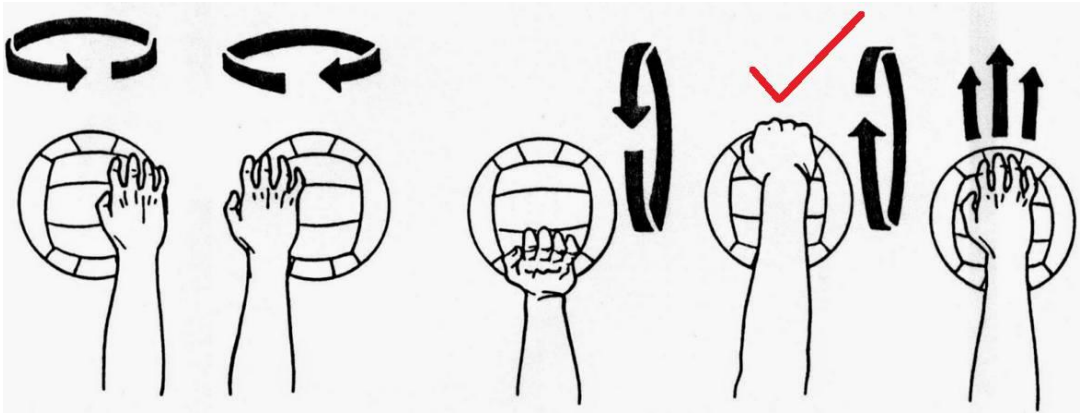
Hitting in the air is a technique of hitting the ball to the opponent's court in the air, which mainly includes spiking and receiving spiking.

3. Volleyball spike skill: When there is a block, when the opposing blocking team is ready to take off and block, the player should quickly determine the landing point of the ball and take different take-off methods to throw the ball from the air.

One-handed spike: When the opponent does not block the net, the player can use one-handed spike, two-handed spike, take-off spike, run-up spike and other methods to catch the ball.

Run-up and take-off spike: After the athlete completes the run-up and take-off in the air, he directly hits the ball in the air.

When the spike hits the ground, if the take-off is not timely or not high, the body posture should be adjusted in time to lower the center of gravity and the height of the center of gravity to reduce the impact of the body. If the take-off height is low after take-off, students should use the movement of arms and shoulders to increase the swing amplitude, or use the rotation movement to drive the movement of arms and shoulders to increase the swing amplitude. When smashing a long-distance ball, try to buffer the hitting action before landing. When taking close shots, keep the weight between the feet and keep the upper body straight or turn right slightly. When hitting the ground, try not to use the landing technique of waist and leg strength. The force sequence of spiking landing is knee joint-thigh-back-shoulder joint-elbow joint. Use the strength of abdomen, shoulders, waist, legs and hands to cushion the ball. When landing, pay attention to cushioning when landing, which is the key to the long-range ball.



4. Simulation practice.

Spike route refers to the route used by athletes when they smash, and it is an important part of spike technology. It directly affects the success rate of spike, and then affects the offensive effect. There are generally three kinds of spike lines: one is to move from the front of the net to both sides, and then from one side to the other; The second is to move in two directions from the front of the network, and then move from one side to the other; Third, it moves from the front end of the network to the middle.

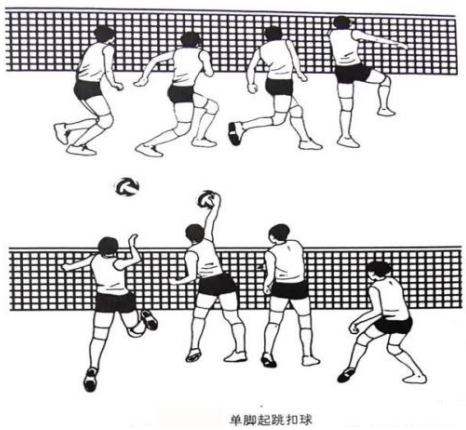
In the competition, athletes often use the following spike lines: First, the spike line is upward, mainly moving forward, backward and left and right, and then moving upward or left and right from the side.

The second is the spike line on the side, which mainly has two ways: moving left and right and moving back and forth. Proper spiking will not only affect the athletes' psychology and emotions, but also affect the results of the competition. Whether the choice of spike route is reasonable or not should be analyzed according to different situations, and corresponding countermeasures should be formulated. In offensive tactics, athletes must seriously consider and study the route, position, form, speed or strength of spike. Run in place to keep balance in practice.

When landing, the arms naturally swing to the sides of the body before landing to move the center of gravity forward. When landing, the adjustment action is that the feet are parallel to the shoulder width, the center of gravity of the body moves between the feet and the soles of the feet, and the feet land on the ground. At the moment of take-off, due to the forward swing of arms and the forward movement of body center of gravity, the body is in a state of flight. If the landing action is not adjusted in time, it will have a certain impact on the subsequent takeoff. When landing, pay attention to the slight flexion of the knees, swing the arms back and forth, and touch the ground with the fingertips. When stepping on the ground after flying, the arms swing rapidly with the forward flight of the body, and the hands are quickly separated to the sides. When landing, students should first land with the forefoot of the left foot or the forefoot of the right foot, and lift the arms with the waist. Landing can be faster when students are in the air for a long time after take-off. If the landing action is not adjusted in time, it will affect the completion of the follow-up action.

In order to improve the success rate and effect of spike, spike athletes should pay attention to the following points in the competition:

① Decisive take-off;
② When taking off, the feet naturally open to shoulder width;
③ The weight of the body moves forward after take-off.



Teachers can make students feel the tension and intensity of volleyball match by simulating the match and watching the video of the match, and stimulate their interest in learning. Teachers need to design suitable training scenes according to athletes' technical level and training objectives. For example, a standard volleyball court with a length of 1.8 meters and a width of 2 meters is set indoors. The two rows of chairs are 1.5 meters apart. There are five balls in each corner, two of which are volleyball. There are six chairs on the field, and there is a 1.2m wide runway between the chairs. At the beginning of the volleyball match, the referee and the referee sat in the chairs in the first row, and two players stood on both sides of the playing field. The referee can pass the ball and serve to the first-row players by hand, or start with gestures. The two players who practice spiking practice according to the requirements of the referee. It can simulate the pressure in the game and create various spiking environments, such as different heights and speeds. By creating diverse scenes, athletes can adapt to different competition conditions and improve their ability to cope with complex situations.

Learning activities

The application of Simpson's seven steps in volleyball blocking techniques.

Step 1 Perception

The ability to use sensory clues to guide sports activities. This includes sensory stimulation, clue selection and volleyball spike consciousness, which can cultivate students' sensory awareness of volleyball spike technique and feel volleyball spike technique from the sensory level.

Step 2 Preparation

Prepare for action. It includes mental, physical and emotional sets. These three groups are predisposed to determine a person's response to different situations. Take students to the actual volleyball court and let them experience volleyball. Teachers can organize students to carry out on-the-spot training and competitions, so that they can feel the charm of volleyball and gradually become familiar with and master the rules and skills.

Step 3 Guided response

The early stage of learning a complex skill includes imitation, trial and error. The adequacy of performance is obtained through practice.

1) Teachers guide students to do jogging, stretching and other warm-up activities to ensure that students are physically active.

2) Teachers organize students to practice volleyball spiking skills in groups of four, and ask students to observe and imitate the basic movements.

3) Students practice various volleyball spike skills: (1) Take off in situ; (2) lateral takeoff; (3) run-up and take-off; (4) hitting the ball in the air; (5) Peak line 6) Landing.

4) Teachers give suggestions to correct students' technical mistakes in volleyball spike.

5) Teachers select several students to demonstrate to stimulate other students' learning motivation.

Step 4 Mechanism

1) Consolidate students' knowledge and skills through repeated training and practice. Teachers can design various exercises and training activities to make students repeat and consolidate what they have learned and improve their technical level and tactical awareness.

2) Organize students to have a simple volleyball match, so that students can experience the essentials of action in actual combat. Practice the spike technique on the volleyball court. During the training, balance can be established through training.

3) Practice in a fixed position (for example, a line or a series of distances) to keep the body balanced.

Master body balance and motor skills through practice. For example, let teammates look at your feet and hands from different angles.

Look at the ball from different angles and try to change the direction of the ball by moving different positions. For example, move the ball to the left once and then to the right again.

4) Practice running in place in practice to keep balance.

The teacher emphasizes the importance of teamwork in the competition and guides students to learn to cooperate and support each other.

Step 5 Complex response

Skillful performance of movements involves complex movement patterns. Proficiency is fast, accurate and highly coordinated, and requires minimal energy. This category includes execution without hesitation and automatic execution.

Explicit reaction can reflect whether the student has mastered the spike technique. When practicing spike skills, students must pay attention to improving their physical fitness and basic skills. Only by improving physical fitness and basic skills, can students better master the spike technique. But be careful not to pursue speed and strength. For beginners, it is best not to imitate the exercises of high-level athletes. Because imitation is easy to make mistakes, it is not conducive to beginners to improve their spike skills.

Step 6 Adaptation

Skills are well developed, and individuals can modify their exercise patterns to meet special requirements.

1) Teachers demonstrate different types of volleyball spike techniques. Let the students learn and play the spiking technique again.

2) Teachers select students who still lack skills to practice repeatedly to further adapt. Students will play better when they practice their spiking skills repeatedly.

Step 7 Creation

Create new movement patterns to adapt to specific situations or specific problems. Learning outcomes emphasize creativity based on highly developed skills.

1) Teachers comprehensively evaluate students' volleyball spike skills and give corresponding feedback. Guiding conclusions can help students understand their technical level and shortcomings, and provide guidance for further study.

2) Students constantly improve their learning methods and strategies through evaluation and summary, so as to improve their learning effect and efficiency.

3) Teachers organize students to make concluding remarks, so that students can share their gains and feelings in volleyball spike technique.

4) According to the teacher's suggestion, students practice volleyball spike technique again and innovate appropriately.

Measurement and evaluation

1. Observe student's performance in training and competition, and evaluate their mastery of volleyball spike technique.

2. Design group exercises to evaluate student's spike technique ability.

3. Organize individual or group presentations of students and evaluate their performance.

4. Observe student's understanding and application of the danger of volleyball spike technique in class discussion and summary.

Teaching media

Volleyball courts and equipment, including volleyball, nets and venue signs. The video of volleyball match is used to watch and analyze the skills and tactics of the match.

Learning schedule: volleyball spiking skill (9 hours)

Date/time	Teaching process	Time
Day 3 09.00-09.20	**Introduction** When introducing the learning objectives of volleyball spike technique, the teacher first introduces the content of Simpson Instruction Model, and elaborates the significance and application of Simpson Instructional Model in the seven stages of volleyball spike technique.	20 minutes
09.20-10.20	**Learning content** 1) Volleyball spike technique; 2) The preparation posture of volleyball spike technique; 3) Volleyball spike skills; 4) Simulation practice.	1 hour
10.20-12.00	**Learning activities:** Simpson Instructional Model includes seven stages: **Step 1 Perception:** Build sensory stimulation, clue selection and spike awareness to cultivate students' sensory awareness of volleyball spike technology, and feel volleyball spike skills from the sensory level. **Step 2 preparation:** Take students to the actual volleyball court and let them experience volleyball. **Step 3 Guided response:** Students jog and practice in groups: (1) Take off in the same place; (2) Lateral takeoff; (3) Run-up and take-off; (4) Hitting the ball in the air; (5) Peak line; 6) Landing. After that, the teacher gave some suggestions to correct the technical mistakes of students' volleyball spike.	1 hour and 40 minutes
12.00-13.00	**Lunch time**	
13.00-15.00	**Step 4 Mechanism:** The intermediate stage of learning a complex skill. After studying and practicing the contents of volleyball spike technique, students think that the characteristics	2 hours

Date/time	Teaching process	Time
	of spike technique are as follows: The spike technique of each player is very important, and players should be reasonably allocated and their skills should be brought into play, and they should have the ability to change and adjust their skills flexibly in the competition.	
	After class, students lined up to relax their muscles, and the teacher explained the next steps.	
Day 4 09.00-10.00	Students jog in the volleyball court to warm up, and practice spiking skills in groups.	1 hour
10.00-11.30	**Step 5 Complex response:** Skillful performance of movement includes complex movement patterns. When practicing spike technique, students must pay attention to improving their physical fitness and basic skills. **Step 6 Adaptation:** Skills are well developed, and individuals can modify their exercise patterns to meet special requirements. Students will do better when they practice the spike technique repeatedly.	1 hour and 30 minutes
11.30-13.00	**Lunch time**	
13.00-14.30	**Step 7 Creation:** Create a new movement pattern to adapt to a specific situation or a specific problem. Learning outcomes emphasize creativity based on highly developed skills. Students practice volleyball spike technique again and innovate appropriately.	1 hour and 30 minutes
	After class, the students line up to relax their muscles, and the teacher explains the next learning content.	

Lesson Plan III

Content

Volleyball blocking skill

Objective of Learning

1. Students understand the concept of volleyball blocking technique. (K)
2. Students can block the net at this point. (P)

Main ideas/concepts

Volleyball is a highly technical team sport. Blocking technique is one of the most important techniques in volleyball competition, the main means of defense and counterattack, and the main factor to improve the performance of volleyball competition. Blocking technology can be said to be the most critical technical link for athletes on the field, which directly affects the outcome of the game. Volleyball blocking technique uses hands and arms as the main offensive means, and blocks the ball with the front of the body with both hands or one hand, so that the ball cannot enter the court. Volleyball blocking is a highly technical sport. It requires athletes to have good physical fitness, flexibility and coordination, and master the skills of blocking tennis. Therefore, how to effectively train and evaluate volleyball blocking technology has become the focus of teachers and students.

Introduction

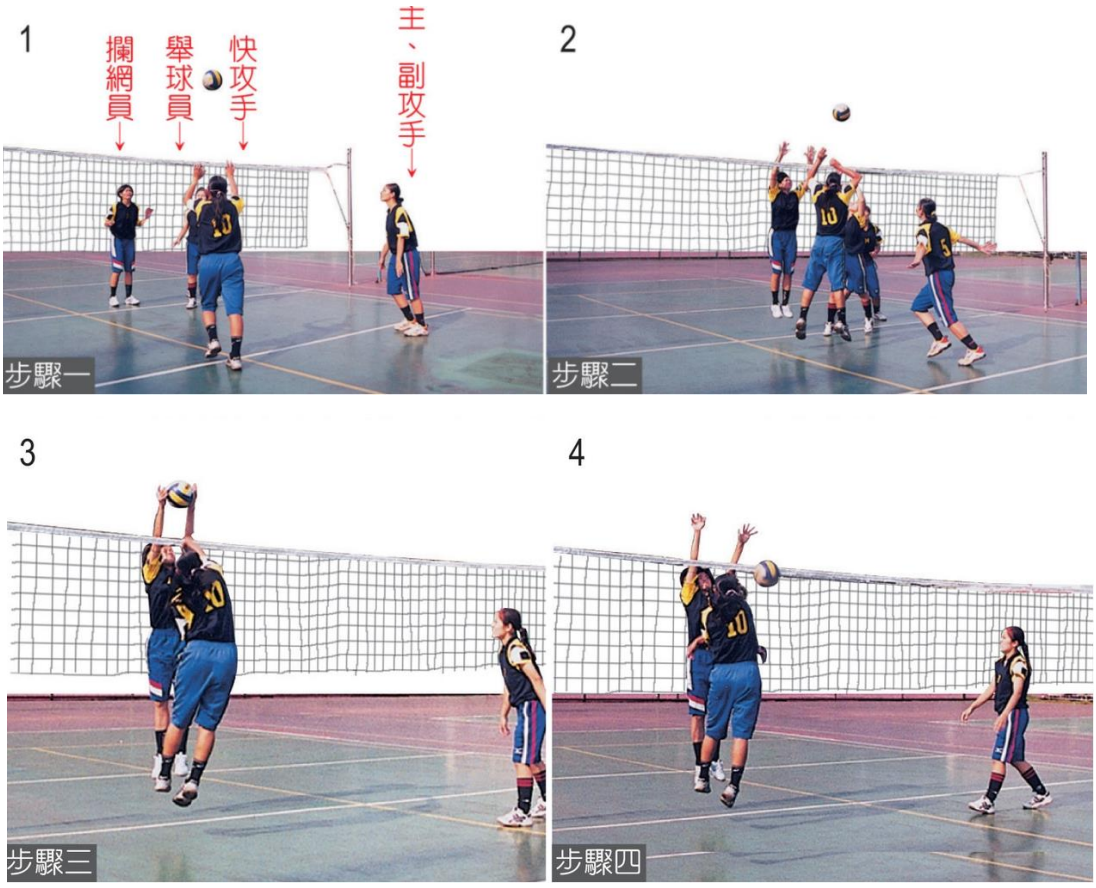
The teacher first introduces the contents of Simpson Instructional Model, and expounds in detail the significance and application of Simpson Instructional Model in seven stages of volleyball blocking techniques: 1) perception, 2) preparation, 3) guided response, 4) mechanism, 5) complex response, 6) adaptation, 7) creation.

Learning content

The teacher explained the concept of volleyball blocking: 1) the importance of blocking; 2) The preparation posture of volleyball blocking technique; 3) Volleyball blocking skills; 4) Simulation practice.

1. The importance of blocking. Blocking is one of the most important defensive methods in volleyball match. An accurate and powerful block can effectively block the opponent's attack and reduce the opponent's chances of scoring. The accuracy and height of blocking directly affect the bounce and path of the ball, and determine

whether the ball can be stopped successfully. The rhythm of the game can be controlled by the strength and accuracy of blocking. A successful block can force an opponent to adjust the offensive strategy and even interfere with the offensive rhythm. The strength and accuracy of blocking can quickly change the situation of the game and gain an advantage for one side. Blocking can effectively block the opponent's offensive ball and reduce the opponent's chances of scoring. Powerful blocking can not only block the opponent's offensive ball, but also put pressure and trouble on the opponent and reduce the opponent's offensive effect. A successful block can inspire the morale and confidence of the whole team. A successful block can not only win points for the team, but also boost the team's morale and increase the team's confidence and fighting spirit. Blocking is a technique that requires teamwork. The success of blocking is inseparable from the cooperation and support of teammates. Through good communication and tacit understanding, team members need to cooperate to complete the blocking action, so as to maximize the blocking effect.



2. The preparation posture of volleyball blocking technique

1) Block preparation posture. Arms straight, shoulders at the same height.

2) The five fingers are naturally opened, and the wrist is naturally bent into an arc to keep the body balanced and stable.

3) When facing the net, the feet should be opened in parallel about shoulder width, 30-40 cm away from the net, the knees should be slightly bent, and the arms should be naturally bent and placed on the chest. Ready to take off or move at any time.

4) When blocking the ball, the arms should be as straight as possible, and the forearms should be lifted on the shoulders. The distance between the hands should be less than the diameter of the ball to prevent the ball from leaking. Stretch the arm in time, it is easy to be out of bounds by thugs or avoided by blockers too early, and it is difficult to stop the ball in time.

5) In order to improve the blocking point when blocking the high penalty from the far net, the method of straightening the arm and wrist upward can be adopted to block the spiking route and block the ball upward.

3. Volleyball blocking skills.

The ready position is the ready position on the field before blocking. This preparation posture consists of two parts: first, keep the arms straight and the shoulders at the same height; Second, the body leans forward slightly, with two feet standing back and forth, the left foot taking a half step forward to the left, and the right foot taking a step later than the left foot. This is the center of gravity of the body.

When being ready, the students start to act. When moving, pay attention to the fact that the feet are shoulder width apart, the knees are slightly bent, and the upper body leans forward slightly. When one arm swings forward and upward, the other arm should move forward and upward with the swing direction, but it should

not exceed the height of the head; When the arm swings forward and upward, the shoulder joint should rotate slightly backward; When the arm is extended forward, the upper body can lean forward slightly. Tilt the upper body back slightly, but not too much. When the blocking arm or hand is at the highest point, the upper body should be lifted and slightly tilted back. At the same time, push back with the feet to move the body weight forward and forward.

1) Students control the ball with their arms and move according to the height, size and landing point of the ball. Arm movements include upper arm and wrist movements. When blocking, the upper arm is straight and shoulder-width, and the elbow joint is slightly flexed, so that the upper arm and the lower arm are in a straight line to control the strength and direction of the ball. When the ball is higher than the shoulder, the upper arm naturally droops; When the ball is below the shoulder, bend the elbow of the upper arm and straighten it forward and upward. When the ball is above the waist, the forearm and forearm form a straight line. When blocking the net, control the ball with the strength of your wrist. In the process of blocking, the strength of the wrist is very important. Wrist should not only have good flexibility and coordination, but also have certain strength to control the ball.

Key points of arm action when blocking the net: straighten and bend the elbow; The boom is vertical to the ground; Five fingers open naturally; The wrist naturally bends into an arc; Press your wrist down to make it stronger; Keep the body balanced and stable.

2) After take-off, students can shift their weight to their front feet and quickly retract between their legs. When taking off, straighten the legs, turn the body slightly to the left, then lift the upper body and let the arms droop naturally. When the ball approaches the two arms, the center of gravity of the body moves forward quickly, and the upper body leans back quickly, so that the speed of swinging the arms forward is greater than the speed of the ball. During the whole take-off, the arm should be naturally straightened with the back of the upper body to keep the body balanced. The more the upper body leans back, the better the blocking effect. But the student can't force the back to show difficult movements.

When taking off, the student should pay attention to:

Firstly, keep the arms straight and get as close to the ball as possible.

Secondly, the upper body should keep a certain forward tilt.

Thirdly, arms should be completely open.

Fourthly, don't suddenly accelerate or stop during take-off.

Fifthly, don't press the ball with the wrist or pluck it with the fingers when taking off.

Sixthly, after taking off, move the body weight to the front foot and quickly retract between the legs.

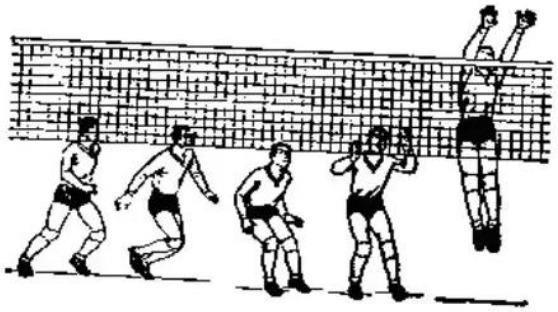


图 176 向左移动起跳

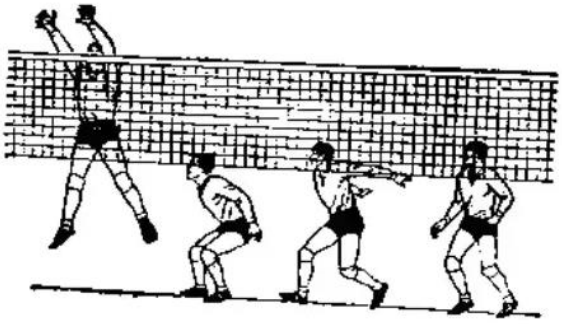


图 177 向右移动起跳

3) Determine the hitting point according to the impact point of the opponent's service and the angle between the ball and the ground.

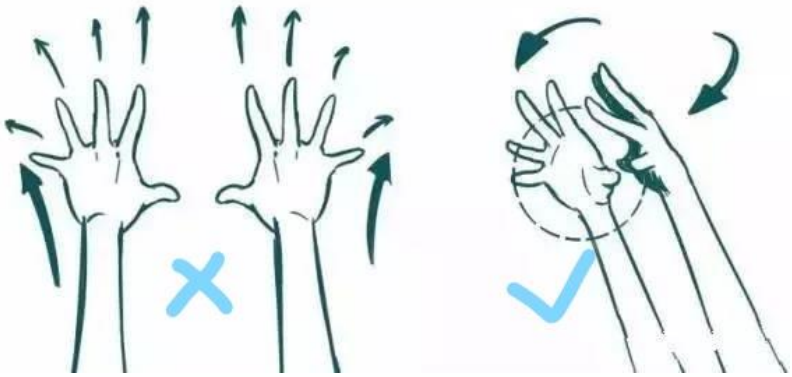
① The flying direction of the ball. The hitting direction of the block is consistent with the flying direction of the ball, which is beneficial to the coordination of take-off, moving and blocking. However, it can't be considered that blocking only plays the role of "take-off", and it also needs the cooperation of technical actions such as action, take-off and hitting.

② The time of blocking. The preparation should be started before the ball takes off. Only in this way, can the student get ready for take-off.

③ The perspective of blocking. The hitting point should be determined according to the landing point of the opponent's service and the angle between the ball and the ground. If it is a general flat serve, the student can lift it straight up with

half an arm and block the ball with arm strength; If it is a heavy serve or an oblique serve, all arms should be straight and lifted upward to stop the ball with physical strength.

④ From the coordination of blocking action. The student should grasp it flexibly according to the situation of the server, and don't fix it. At the same time, be careful not to block the ball with the arms only, but also to be comprehensive.



4. Simulation practice. After the blocker took off smoothly, the students quickly returned to the preparation posture. When landing, put the arms back, push the legs to the ground at the same time, bend the elbows and stretch forward, and move forward the body center of gravity. Hold the ball on the back of the block with both hands, with the knees slightly bent and slightly buckled.

After the blocker lands, the student should actively look for the next blocker and quickly turn his attention to the goal of preparing for the next blocker. When the student realizes that he is ready, he should make correct judgments and reactions in time.

① Pay attention to the position and direction of the incoming ball when blocking the net, and choose the appropriate take-off method according to the size and strength of the incoming ball. When judging that the ball is in front of the setter or the net, the student can block the net with both hands or one hand; When judging that the opponent's offensive power is strong or the ball moves in his own direction, block the net with one or both hands.

② When intercepting spiking, the student should choose the appropriate take-off mode. Take off in front of the net. Take off decisively without hesitation. After taking off, the student should pay attention to the size and strength of the ball to determine whether he can block it.

③ When blocking, pay attention to the reasonable selection of blocking stations. When blocking, he should determine the position according to his own

ability and the direction of the opponent's attack. The position should be far away from the attacking players, so as to observe and judge the direction and strength of the ball.

Teachers can make students feel the tension and intensity of volleyball match by simulating the match and watching the video of the match, and stimulate their interest in learning. Teachers need to design suitable training scenes according to students' technical level and training objectives. For example, a standard volleyball court with a length of 1.8 meters and a width of 2 meters is set indoors. The two rows of chairs are 1.5 meters apart. There are five balls in each corner, two of which are volleyball. There are six chairs on the field, and there is a 1.2m wide runway between the chairs. At the beginning of the volleyball match, the referee and the referee sat in the chairs in the first row, and two players stood on both sides of the playing field. The referee can pass the ball and serve to the first-row players by hand, or start with gestures. The two players who practice blocking practice according to the referee's requirements. It can simulate the pressure situation in the game and create various blocking environments, such as different heights and speeds. By creating diverse scenes, the students can adapt to different competition conditions and improve their ability to cope with complex situations.

Learning activities

The application of Simpson Instruction Model in volleyball blocking techniques.

Step 1 Perception

The ability to use sensory clues to guide sports activities. This includes sensory stimulation, clue selection and volleyball blocking awareness to cultivate students' sensory awareness of volleyball blocking technology and to feel volleyball blocking skills from the sensory level.

Step 2 Preparation

Preparing for action. It includes mental, physical and emotional sets. These three groups are predisposed to determine a person's response to different situations. Take students to the actual volleyball court and let them experience volleyball atmosphere. Teachers can organize students to carry out on-the-spot training and competitions, so that they can feel the charm of volleyball and gradually become familiar with and master the rules and skills.

Step 3 Guided response

The early stage of learning a complex skill, including imitation, trial and error. The adequacy of performance is obtained through practice.

1) Teachers guide students to do jogging, stretching and other warm-up activities to ensure that students are physically active.

2) Teachers organize students to practice volleyball blocking techniques in groups, and ask students to observe and imitate basic movements.

3) Students practice various volleyball blocking skills: (1) arm movements; (2) take-off; (3) Hitting the ball; (4) Landing.

4) The teacher gives some suggestions to correct the technical mistakes of students' volleyball blocking.

5) The teacher selects several students to stimulate other students' learning motivation.

Step 4 Mechanism

1) Teachers consolidate students' knowledge and skills through repeated training and practice. Teachers can design various exercises and training activities to make students repeat and consolidate what they have learned and improve their technical level and tactical awareness.

2) Teachers organize students to have a simple volleyball match, so that students can experience the essentials of action in actual combat. (1) The blocking technique is practiced on the volleyball court, and the balance can be established through training. Here are some training methods:

Practice in a fixed position (for example, a line or a series of distances) to keep the body balanced.

Master body balance and motor skills through practice. For example, let teammates look at your feet and hands from different angles.

Look at the ball from different angles and try to change the direction of the ball by moving different positions. For example, move the ball to the left once and then to the right again.

3) Students practice running in place in practice to keep balance.

The teacher emphasizes the importance of teamwork in the competition and guides students to learn to cooperate and support each other.

4) Teachers should encourage and praise students in time in the competition to improve their self-confidence.

Step 5 Complex response

Skillful performance of movements involving complex movement patterns. Proficiency is fast, accurate and highly coordinated, and requires minimal energy. This category includes execution without hesitation and automatic execution.

Explicit reaction can reflect whether students have mastered the blocking technique. When practicing blocking skills, teachers must pay attention to improving our physical fitness and basic skills. Because only by improving physical fitness and basic skills, can students better master the blocking technique. But be careful not to pursue speed and strength. For beginners, it is best not to imitate the exercises of high-level athletes. Because imitation is easy to make mistakes, it is not conducive to beginners to improve their blocking skills.

Step 6 Adaptation

Skills are well developed, and individuals can modify their exercise patterns to meet special requirements.

1) Demonstrate different types of volleyball blocking techniques. Ask the students to learn and play the blocking technique clip again.

2) Select students who still lack skills to practice repeatedly to further adapt. Students will play better when they practice the blocking skills repeatedly.

Step 7 Creation

Create new movement patterns to adapt to specific situations and problems. Learning outcomes emphasize creativity based on highly developed skills.

1) Teachers comprehensively evaluate students' volleyball blocking skills and give corresponding feedback. Guiding conclusions can help students understand their technical level and shortcomings, and provide guidance for further study.

2) Students constantly improve their learning methods and strategies through evaluation and summary, so as to improve their learning effect and efficiency.

3) Teachers organize students to make concluding remarks, so that students can share their gains and feelings in volleyball blocking techniques.

4) According to the teacher's suggestion, students practice volleyball blocking technique again and innovate appropriately.

Measurement and evaluation

1. Observe student’s performance in training and competition, and evaluate their mastery of volleyball blocking techniques.

2. Design group exercises to evaluate student’s blocking technique ability.

3. Organize individual or group presentations of students and evaluate their performance in serving.

4. Observe student’s understanding and application of the danger of volleyball blocking techniques in class discussion and summary.

Teaching media

Volleyball courts and equipment, including volleyball, nets and venue signs. The video of volleyball match is used to watch and analyze the skills and tactics of the match.

Learning schedule: volleyball blocking skill (9 hours)

Date/time	Teaching process	Time
Day 5 09.00-09.20	**Introduction** When introducing the learning goal of volleyball blocking technology, the teacher first introduces the content of Simpson Instructional Model and elaborates the significance and application of Simpson Instructional Model in the seven stages of volleyball blocking technology.	20 minutes
09.20-10.20	**Learning content** 1) The importance of volleyball blocking technique; 2) The preparation posture of volleyball blocking technique; 3) Volleyball blocking skills; 4) Simulation practice.	1 hour
10.20-12.00	**Learning activities:** Simpson teaching mode of volleyball blocking in seven stages: **Step 1 Perception:** Set up sensory stimulation, clue selection and blocking awareness, to cultivate students' sensory awareness of volleyball blocking technology and feel volleyball blocking skills from the sensory level. **Step 2 Preparation:** Take students to the actual volleyball court and let them experience volleyball. **Step 3 Guided response:** students jog and practice in groups: (1) arm movements; (2) take-off; (3) Hitting the ball; (4) Landing. After that, the teacher gave some suggestions to correct the technical mistakes of students' volleyball blocking.	1 hour and 40 minutes
12.00-13.00	**Lunch time**	
13.00-15.00	**Step 4 Mechanism**: This is the intermediate stage of learning a complex skill. After studying and practicing the content of volleyball blocking technique, students think that the characteristics of blocking technique are as follows: Every player's	2 hours

Date/time	Teaching process	Time
	blocking technique is very important, so players should be reasonably allocated and their skills should be brought into play, and they should have the ability to change and adjust their skills flexibly in the competition.	
	After class, students lines up to relax their muscles, and the teacher explained the next steps.	
Day 6 09.00-10.00	Students jog in volleyball court to warm up, and practice blocking skills in groups.	1 hour
10.00-11.30	**Learning activities:** Simpson Instruction Model of volleyball blocking in seven stages: (continue) **Step 5 Complex response:** Skillful performance of movement involving complex movement patterns. When practicing the blocking technique, students must pay attention to improving their physical fitness and basic skills. **Step 6 Adaptation:** Skills are well developed, and individuals can modify their exercise patterns to meet special requirements. Students will do better when they practice the blocking technique repeatedly.	1 hour and 30 minutes
11.30-13.00	**Lunch time**	
13.00-14.30	**Step 7 Creation:** Create a new movement pattern to adapt to a specific situation or a specific problem. Learning outcomes emphasize creativity based on highly developed skills. Students practice volleyball blocking technique again and innovate appropriately.	1 hour and 30 minutes
	After class, the students lined up to relax their muscles, and the teacher explained the next learning content.	

Assessment Form for Validity of the Objective Test

Objective of Leaning	The Item Questions
Students understand concept of volleyball serving skills	1. Which of the following options is the beginning of the game and fast break? A) Pass **B) Serve** C) Spike D) Block
	2. Which of the following options is the width of the volleyball tee? A) 3 meters B) 6 meters **C) 9 meters** D) 12 meters
	3. Which of the following judgments is correct, the foul serving and the wrong position of the receiving team members? **A) The team fouls** B) Receiving a foul from the team C) Sending and receiving teams are not fouled. D) All fouls
	4. Which of the following heights is the most suitable distance from the forehand serve? **A) 20cm** B) 30cm C) 40cm D) 50cm
	5. When organizing the lineup, if our front row is strong in spiking and blocking, how should the selection of serving players be arranged? A) Players with high accuracy and grasp. B) Players who serve with great power but make more mistakes. **C) Players who serve hard** D) Players with poor serve accuracy.

Objective of Leaning	The Item Questions
Students understand concept of volleyball serving skills	6. When organizing the lineup, which of the following arrangements is correct for two players with poor serving reception? **A) Don't arrange in the adjacent position** B) Any arrangement. C) Arranged in the adjacent position. D) Diagonal arrangement.
	7. In volleyball match, the second referee bends his elbow with one arm and raises his palm with the other. On this fingertip, which of the following options is the meaning expressed by the referee? A) Serve **B) Pause** C) Substitution D) Foul
	8. The server wins a point. Which of the following options should the player continue to serve? **A) No.1** B) No.2 C) No.3 D) No.6

Assessment Form for Validity of the Objective Test

Objective of Leaning	The Item Questions
Students understand concept of volleyball spiking skill.	1. Which of the following options is the most active and effective means of attack in volleyball match? A) (of volleyball) Fake hit B) Block C) Serve **D) Spike**
	2. Which of the following skills is the most aggressive basic skill in volleyball, the most active and effective offensive weapon and scoring method? A) Serve **B) Spike** C) Pass the ball D) Hanging ball
	3. When spiking, on which position should the hand touch the ball? A) Palm root stroke B) Finger stroke **C) Full palm** D) Palm stroke
	4. When spiking, where should you hit the ball? A) Top B) Posterior lower part **C) Posterior middle and lower part** D) Posterior middle-upper part
	5. The landing technique of spike action should be which of the following postures? A) Direct full sole landing B) The forefoot touches the ground **C) From the forefoot to the whole foot landing** D) Landing on the back sole.

Objective of Leaning	The Item Questions
Students understand concept of volleyball spiking skill.	6. Which of the following options is the run-up route of the kick-off ball? **A) Straight run-up** B) Outer winding run-up C) Diagonal run-up D) In-situ run-up
	7. We are used to calling receiving the opponent's spike and its attack as which of the following options? **A) Anti-reverse** B) An attack C) Attack again D) Defense
	8. Which of the following options is the biggest feature of a short flat fastball? A) Fast speed B) Attack point activity C) Easy to form **D) It's available at 3 o'clock**

Assessment Form for Validity of the Objective Test

Objective of Leaning	The Item Questions
Students understand concept of volleyball blocking skill.	1. Which of the following volleyball techniques belongs to the ball technique? **A. Block** B. Ready for posture C. Moving D. Hitting the ball
	2. When volleyball is blocked, which of the following options is correct?. a. 20—30cm **b. 30—40cm** c. 40—50cm d. 50-60cm
	3. The volleyball net is erected over the center line, which of the following heights is correct? A. 2.40 meters B. 2.42 meters **C. 2.43 meters** D. 2.44 meters
	4. In the game, which of the following options is correct when one (two) foot or hand of a player completely crosses the center line and touches the opponent's court? A. Entering the opposing field **B. Crossing the center line foul** C. Interfere with the game D. Touching the net foul
	5. After blocking and jumping, which of the following states should the body maintain is correct? **A. Slightly with chest and abdomen** B. Chest out C. Into a reverse arch. D. Standing upright

Objective of Leaning	The Item Questions
Students understand concept of volleyball blocking skill.	6. The following statement is wrong? **A. Players in the back row can pad the ball over the net in the frontcourt.** B. The free defenders in the back row can pad the ball over the net in the frontcourt. C. Blocking players can't put their hands across the net. D. Players are not allowed to block the opponent's serve.
	7. Which of the following options is not the correct way to block movement? A. Step by step movement B. Crossing step movement B. Running **D. Jumping in place**

Assessment Form for Validity of the Performance Assessment

Developing scoring criteria to serv the volleyball.

Assessment items	Criterial of Score		
	3=Good	2=Fair	1=Poor
1. Float serving: at the point.	Able serve 8-10 balls at zone A point	Able serve 5-7 balls at zone A point	Able serve less than 5 balls at zone A point
2. Topspin serving: at the point			
3. Jump serving: at the point.			
4. Jump float serving: at the point.			
5. Friction serving: at the point.			

Developing scoring criteria to spike volleyball.

Assessment items	Criterial of Score		
	3=Good	2=Fair	1=Poor
1. Before spiking Players use the appropriate preparation posture: 1) feet are shoulder-width apart and slightly bent to maintain balance and stability, 2) keep hands in front of you ready to grab and pound, 3) keep arms straight and palms open, touch the ball with the palm and fingertips of the hand, 4) use their strength and hand skills to make the ball spin and be strong.	Students can prepare completely before spiking	Students can prepare moderately before spiking	Students can prepare little before spiking

Assessment items	Criterial of Score		
	3=Good	2=Fair	1=Poor
2. Ready to take off Players use the appropriate preparation posture: 1) feet should be about shoulder width, 2) left foot is in front, his right foot is behind, and his heel is slightly raised, 3) lift your arms to the side, straighten your left arm, bend your right arm 90, and place it at your side, 4) Turn your upper body slightly to the left and lean forward about 45. Knees slightly bent.	Students can prepare completely ready to take off	Students can prepare moderately ready to take off	Students can prepare little ready to take off
3. preparing posture All parts of the body should have a large range of activities and full extension: 1) the weight of the whole body is transferred to the left foot, the upper body turns left and leans forward slightly, and the left foot stretches forward slightly, 2) after kicking your legs, turn your hips quickly, tilt your upper body backward to the left, and swing your arms back and forth quickly. At the same time, the center of gravity moves forward to the right foot and turns right, and the arms are lifted forward and left from the back, 3) the key to preparing posture is to appropriately increase the upper body to lean forward.	Students can prepare complete body postures.	Students can prepare moderate body postures.	Students can prepare little body postures.

Assessment items	Criterial of Score		
	3=Good	2=Fair	1=Poor
4. take-off in situ student can take off in situ: 1) naturally open their arms, keep their eyes on the front, put their feet together or touch the ground with their front feet, 2) During the run-up, the right foot first lands on the ground in front of the sole of the foot, and the toes slightly turn outwards; 3) push the heel to the ground and lift the front foot off the ground. When hitting the ball, the forefoot is slightly buckled inward, and the knee is slightly bent.	Students can take off in situ the ball completely	Students can take off in situ the ball moderately	Students can take off in situ the ball a little
5. take-off from back to front student can take-off from back to front mainly includes: 1) Rotate backward by 45 or 60; 2) Turn from front to top, lift your legs and take off with your hind feet; 3) keep the body upright, open your arms naturally, rotate your forearms inward and bend your elbows.	Students can take-off the ball from back to front completely	Students can take-off the ball from back to front moderately	Students can take-off the ball from back to front a little
6. take-off in the air student can take-off in the air, and directly hits the ball in the air: 1) timely adjustment of body posture to reduce shock to the body. If the takeoff altitude is low after takeoff Rotational motion can be applied to drive arm and shoulder movement to increase swing width, 2) long-distance ball hitting try to buffer the hit before it hits the ground, 3) taking-off weight between feet and keep upper body straight or slightly to the right, 4) When hitting the ground, try not to use the landing technique with the strength of your waist and legs.	Students can take-off the ball in the air completely	Students can take-off the ball in the air moderately	Students can take-off the ball in the air a little

Assessment items	Criterial of Score		
	3=Good	2=Fair	1=Poor
1. Preparing posture for volleyball blocking. Block preparation posture: 1) arms straight, shoulders at the same height, 2) five fingers are naturally opened, and the wrist is naturally bent into an arc to keep the body balanced and stable, 3) facing the net, feet should be opened in parallel about shoulder width, 30-40 cm away from the net, the knees should be slightly bent, and the arms should be naturally bent and placed on the chest. Ready to take off or move at any time.	Students can prepare posture of volleyball blocking completely	Students can prepare posture of volleyball blocking moderately	Students can prepare posture of volleyball blocking a little
2. Volleyball blocking When blocking the ball: 1) the arms should be as straight as possible, and the forearms should be lifted on the shoulders, the distance between the hands should be less than the diameter of the ball to prevent the ball from leaking, stretch your arm in time, 2) when blocking the high penalty from the far net, the method of straightening the arm and wrist upward can be adopted to block the spiking route and block the ball upward, 3) can control the ball with your arms and move according to the height, size and landing point of the ball, 4) Can block and hit the ball into the opponent's area	Students can block the ball completely	Students can block the ball moderately	Students can block the ball a little

Appendix D
The Results of the Quality Analysis of Research Instruments

Assessment for Validity of Volleyball Serving Lesson Plan

Directions

Please assess the congruence between components of lesson plan by using Simpson Instructional Model by putting ✓ in the box according to the following criteria

Rating is +1. There is an opinion that "Consistent to relevant. "

Rating is 0. There is an opinion that "Not sure it consistent to relevant. "

Rating is -1. There is an opinion that "Inconsistent with relevant. "

No.	Questions	Expert			Total	IOC	Interpretation
		1	2	3			
1	The content is related to learning objectives.	+1	+1	+1	3	1.00	Suitable Can be used
2	The learning processes are related to teaching.	+1	+1	+1	3	1.00	Suitable Can be used
3	The learning objectives are consistent with the subject matter.	+1	+1	+1	3	1.00	Suitable Can be used
4	The learning activities are related with using Simpson Instructional Model.	+1	+1	+1	3	1.00	Suitable Can be used
5	The assignment of practicing volleyball serving ability is related to the contents.	+1	+1	+1	3	1.00	Suitable Can be used
6	There are various assessments related to learning objectives.	+1	+1	+1	3	1.00	Suitable Can be used
7	The measurement and evaluation are related to learning objectives.	+1	+1	+1	3	1.00	Suitable Can be used

Assessment for Validity of Volleyball Spiking Lesson Plan

Directions

Please assess the congruence between components of lesson plan by using Simpson Instructional Model by putting ✓ in the box according to the following criteria

Rating is +1. There is an opinion that "Consistent to relevant. "

Rating is 0. There is an opinion that "Not sure it consistent to relevant. "

Rating is -1. There is an opinion that "Inconsistent with relevant. "

No.	Questions	Expert			Total	IOC	Interpretation
		1	2	3			
1	The content is related to learning objectives.	+1	+1	+1	3	1.00	Suitable Can be used
2	The learning processes are related to teaching.	+1	+1	+1	3	1.00	Suitable Can be used
3	The learning objectives are consistent with the subject matter.	+1	+1	+1	3	1.00	Suitable Can be used
4	The learning activities are related to using Simpson Instructional Model.	+1	+1	+1	3	1.00	Suitable Can be used
5	The assignment of practicing volleyball spiking ability is related to the contents.	+1	+1	+1	3	1.00	Suitable Can be used
6	There are various assessments related to learning objectives.	+1	+1	+1	3	1.00	Suitable Can be used
7	The measurement and evaluation are related to learning objectives.	+1	+1	+1	3	1.00	Suitable Can be used

Assessment for Validity of Volleyball Blocking Lesson Plan

Directions

Please assess the congruence between components of lesson plan by using Simpson Instructional Model by putting ✓ in the box according to the following criteria

Rating is +1. There is an opinion that "Consistent to relevant. "

Rating is 0. There is an opinion that "Not sure it consistent to relevant. "

Rating is -1. There is an opinion that "Inconsistent with relevant. "

No.	Questions	Expert			Total	IOC	Interpretation
		1	2	3			
1	The content is related to learning objectives.	+1	+1	+1	3	1.00	Suitable Can be used
2	The learning processes are related to teaching.	+1	+1	+1	3	1.00	Suitable Can be used
3	The learning objectives are consistent with the subject matter.	+1	+1	+1	3	1.00	Suitable Can be used
4	The learning activities are related to using Simpson Instructional Model.	+1	+1	+1	3	1.00	Suitable Can be used
5	The assignment of practicing volleyball blocking ability is related to the contents.	+1	+1	+1	3	1.00	Suitable Can be used
6	There are various assessments related to learning objectives.	+1	+1	+1	3	1.00	Suitable Can be used
7	The measurement and evaluation are related to learning objectives.	+1	+1	+1	3	1.00	Suitable Can be used

Index of Item Objective Congruence (IOC)
Analysis of the Objective Test

Volleyball Serving skill	Expert Person			Total	IOC	Interpretation
	1	2	3			
Item1	+1	+1	+1	3	1.00	can be used
Item2	+1	+1	+1	3	1.00	can be used
Item3	+1	+1	+1	3	1.00	can be used
Item4	+1	+1	+1	3	1.00	can be used
Item5	+1	+1	+1	3	1.00	can be used
Item6	+1	+1	+1	3	1.00	can be used
Item7	+1	+1	+1	3	1.00	can be used
Item8	+1	+1	+1	3	1.00	can be used
Item9	+1	+1	+1	3	1.00	can be used
Item10	+1	+1	+1	3	1.00	can be used

Volleyball Spiking skill	Expert Person			Total	IOC	Interpretation
	1	2	3			
Item1	+1	+1	+1	3	1.00	can be used
Item2	+1	+1	+1	3	1.00	can be used
Item3	+1	+1	+1	3	1.00	can be used
Item4	+1	+1	+1	3	1.00	can be used
Item5	+1	+1	+1	3	1.00	can be used
Item6	+1	+1	+1	3	1.00	can be used
Item7	+1	+1	+1	3	1.00	can be used
Item8	+1	+1	+1	3	1.00	can be used
Item9	+1	+1	+1	3	1.00	can be used
Item10	+1	+1	+1	3	1.00	can be used

Volleyball Blocking skill	Expert Person			Total	IOC	Interpretation
	1	2	3			
Item1	+1	+1	+1	3	1.00	can be used
Item2	+1	+1	+1	3	1.00	can be used
Item3	+1	+1	+1	3	1.00	can be used
Item4	+1	+1	+1	3	1.00	can be used
Item5	+1	+1	+1	3	1.00	can be used
Item6	+1	+1	+1	3	1.00	can be used
Item7	+1	+1	+1	3	1.00	can be used
Item8	+1	+1	+1	3	1.00	can be used
Item9	+1	+1	+1	3	1.00	can be used
Item10	+1	+1	+1	3	1.00	can be used

Analysis of difficulty value (p) and discrimination power (r) of the objective test to improve volleyball skill by non-sample students

Serving skill	Difficulty value (p)	Discrimination power (r)	Consideration
Item1	0.63	0.20	selected
Item2	0.77	0.47	selected
Item3	0.53	-0.27	cut off
Item4	0.73	0.53	selected
Item5	0.67	-0.40	cut off
Item6	0.67	0.27	selected
Item7	0.67	0.40	selected
Item8	0.70	0.20	selected
Item9	0.47	0.27	selected
Item10	0.70	0.20	selected

From the table analyzing the difficulty value (p) and the discrimination power (r) of the objective test to improve volleyball serving skill, it was found that out of the 10 items of microteaching method. There were 8 quality items selected to be used for testing with the sample group. A difficulty value of between 0.47-0.77 and the discrimination power between 0.20-0.53, namely items 1, 2, 4, 6, 7, 8, 9 and 10.

Volleyball Spiking skill	Difficulty value (p)	Discrimination power (r)	Consideration
Item1	0.67	0.27	selected
Item2	0.80	0.27	selected
Item3	0.73	0.00	cut off
Item4	0.57	-0.07	cut off
Item5	0.80	0.27	selected
Item6	0.77	0.33	selected
Item7	0.57	0.20	selected
Item8	0.70	0.33	selected
Item9	0.53	0.27	selected
Item10	0.70	0.47	selected

From the table analyzing the difficulty value (p) and the discrimination power (r) of the objective test to improve volleyball spiking skill, it was found that out of the 10 items of microteaching method. There were 8 quality items selected to be used for testing with the sample group. A difficulty value of between 0.53-0.80 and the discrimination power between 0.20-0.47, namely items 1, 2, 5, 6, 7, 8, 9 and 10.

Volleyball Blocking skill	Difficulty value (p)	Discrimination power (r)	Consideration
Item1	0.47	0.27	selected
Item2	0.63	-0.07	cut off
Item3	0.70	0.20	selected
Item4	0.43	-0.07	cut off
Item5	0.67	0.27	selected
Item6	0.63	-0.07	cut off
Item7	0.53	0.27	selected
Item8	0.67	0.27	selected
Item9	0.63	0.20	selected
Item10	0.73	0.27	selected

From the table analyzing the difficulty value (p) and the discrimination power (r) of the objective test to improve volleyball blocking skill, it was found that out of the 10 items of microteaching method. There were 7 quality items selected to be used for testing with the sample group. A difficulty value of between 0.43-0.73 and the discrimination power between 0.20-0.27, namely items 1, 3, 5, 7, 8, 9, and 10.

Index of Item Objective Congruence (IOC) analysis of the performance test

	Expert Person			Total	IOC	Interpretation
	1	2	3			
Volleyball serving skill						
1. Float serving: at the point.	+1	+1	+1	3	1.00	can be used
2. Topspin serving: at the point	+1	+1	+1	3	1.00	can be used
3. Jump serving: at the point.	+1	+1	+1	3	1.00	can be used
4. Jump float serving: at the point.	+1	+1	+1	3	1.00	can be used
5. Friction serving: at the point.	+1	+1	+1	3	1.00	can be used
Volleyball spiking skill						
1. Before spiking	+1	+1	+1	3	1.00	can be used
2. Ready to take off	+1	+1	+1	3	1.00	can be used
3. preparing posture	+1	+1	+1	3	1.00	can be used
4. take-off in situ	+1	+1	+1	3	1.00	can be used
5. take-off from back to front	+1	+1	+1	3	1.00	can be used
6. take-off in the air	+1	+1	+1	3	1.00	can be used
Volleyball blocking skill						
1. Preparing posture for volleyball blocking	+1	+1	+1	3	1.00	can be used
2. Volleyball blocking	+1	+1	+1	3	1.00	can be used

Volleyball skill score before and after the project based on Simpson Instructional Model for undergraduate students

Student ID	Pre-test scores (62)			Post-test scores (62)			Difference Score
	Objective test (23)	Performance test (39)	Total	Objective test (23)	Performance test (39)	Total	
1	7	14	21	19	27	46	25
2	6	17	23	18	30	48	25
3	14	22	36	20	36	56	20
4	14	15	29	20	28	48	19
5	15	15	30	19	28	47	17
6	15	21	36	20	34	54	18
7	14	16	30	18	29	47	17
8	18	15	33	20	28	48	15
9	10	15	25	20	29	49	24
10	13	15	28	19	28	47	19
11	10	14	24	19	27	46	22
12	7	23	30	17	36	53	23
13	18	13	31	23	26	49	18
14	9	15	24	16	28	44	20
15	7	16	23	17	29	46	23
16	10	19	29	16	32	48	19
17	17	15	32	21	28	49	17
18	16	15	31	19	28	47	16
19	5	24	29	19	37	56	27
20	8	20	28	18	33	51	23
21	17	18	35	20	31	51	16
22	18	15	33	23	28	51	18
23	11	14	25	18	27	45	20
24	9	15	24	16	28	44	20
25	17	19	36	23	33	56	20
26	9	18	27	19	31	50	23
27	8	17	25	20	30	50	25
28	12	18	30	17	31	48	18

Student ID	Pre-test scores (62)			Post-test scores (62)			Difference Score
	Objective test (23)	Performance test (39)	Total	Objective test (23)	Performance test (39)	Total	
29	11	16	27	20	29	49	22
30	12	15	27	18	28	46	19
$\bar{X}$	11.90	16.80	28.70	19.07	29.90	48.97	20.27
SD.	3.99	2.85	4.18	1.89	2.93	3.35	3.14

Appendix E
Certificate of English

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RAJABHAT UNIVERSITY

This is to certify that

Mr.Yang Wang

Achieved BSRU English Proficiency Test (BSRU-TEP) level

B2

Given on 3rd October 2020

(Assistant Professor Dr Kulsirin Aphiratvoradej)

Director

Appendix F
Turnitin Plagiarism Check Report

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Chapter 1 Wang Yang

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3066 Words	**17904 Characters**
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Appendix G

The Document for Accept Research/ Full Paper

MHESI 8038.1/11

JOURNAL OF MCU UBON REVIEW
Mahachulalongkornrajavidyalaya
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RESPONSE FOR PUBLICATION OF THE ARTICLE

24th October, 2024

The Editorial Department of the Journal of MCU Ubon Review (TCI) of MCU, Ubon Ratchathani Campus has considered the article.

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Your article has been sent to 3 experts for peer review and found that its quality is at a "**Good**" level and academically useful.

Please be informed accordingly.

(Associate Professor, Dr.Phrakhruwutthidhampandit)

Editor of the Journal of MCU Ubon Review (TCI)
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USING SIMPSON INSTRUCTIONAL MODEL TO IMPROVE VOLLEYBALL SKILL OF UNDERGRADUATE STUDENTS

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Abstract

The objectives of this research were 1) to use Simpson Instructional Model to improve volleyball skill of undergraduate students and 2) to compare students' volleyball skill before and after the implementation based on Simpson Instructional Model. The sample group of the study consisted of 30 freshmen at Chongqing Vocational College of Media in China, through cluster random sampling. The research instruments included 1) lesson plans based on Simpson Instructional Model and 2) volleyball skill achievement test. The assessment questions aim to assess two sub-variables within the dependent variable, including: (1) multiple choice test of concept volleyball knowledge and (2) performance assessment. The data were analyzed by mean, and standard deviation and T-test for dependent sample.

The results revealed the followings:

1. Using the Simpson Instructional Model to improve volleyball skill of undergraduate students. The researcher has studied the documents and research related on Simpson Instructional Model and synthesized into 7 steps: 1) Perception, 2) Preparation, 3) Guided response, 4) Mechanism, 5) Complex response, 6) Adaptation, and 7) Creation. The data analysis was assessment of the quality of the lesson plan by 3 experts, and the results are shown the quality of the lesson plan by experts overall, the suitability of the research objectives has the most suitable. After 30 students have learned according to the 3 lesson plans, the results are shown, students' achievement of the volleyball skill the average score after learning was 48.97 which was higher than the average score before learning was 28.70.

2. The comparison of students' volleyball skill score before and after learning by using Simpson Instructional Model. The result found overall that students' volleyball skill score after learning higher than before learning statistically significant at the level .01. When considering the results of data analysis classified by content: serving skill, spiking skill, and blocking skill. The result found that students' volleyball skill score after learning higher than before learning statistically significant at the level .01 for all contents. Therefore, learning by using Simpson Instructional Model could improve students' volleyball skill.

Keywords: Simpson Instructional Model, Volleyball Skill, Undergraduate Students

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Introduction

The General Administration of Sport of the People's Republic of China (2023) pointed out in the overall requirements of the "National Fitness Plan (2023)" that sports are an important support for the great rejuvenation of the Chinese nation, and national fitness is the basic sports right of all people, and an important foundation for achieving national strength and people's happiness. As a nationwide popular sport, it is deeply loved by the people of the whole country. Volleyball originated in the United States. In 1895, William G. Morgan invented it in Hollywood, Massachusetts. Around 1900, volleyball was introduced to Canada from the United States. In 1905, volleyball was introduced to countries such as Cuba, Brazil, and China, becoming a popular fashion sport worldwide at that time (Hao Shifeng, 2019). In recent years, due to the increase in the number of volleyball players, the demand for training methods that are both effective and help athletes improve their skills has correspondingly increased. Volleyball course is one of the three major ball courses and also the core course of physical education. But now, the total class hours of volleyball courses have gradually decreased from 72 in the 1970s and 1980s to 48, which is not conducive to improving their teaching quality. According to national policies, the transition from teaching to testing and then to quality education is not easy, and obviously cannot meet the needs of cultivating volleyball professional education talents in the new era. Despite the continuous reduction of class hours, the quality of the curriculum should still be guaranteed, and we must constantly try teaching reform (Huang Xinyun, 2015).

College volleyball courses should be combined with compulsory and elective courses, the class hours and credits can be clearly defined. The teaching goal emphasized skill mastery, the improvement of physical quality, tactical awareness and mental health. The teaching method emphasized the combination of theory and practice, adopted stratified teaching and multimedia teaching. The evaluation system was diversified and paid attention to the process evaluation to ensure the site facilities, improve the level of teachers and encourage curriculum development, such as intramural competitions, inter-school exchanges, etc., in order to comprehensively improve students' volleyball ability (The Ministry of Education of the People's Republic of China, 2023).

There are significant drawbacks to using traditional teaching methods in the field of sports: learning any sports technique requires a lot of repetitive practice, and the process is very difficult. Liu Jian (2009) pointed out in his article "On the Impact of Classical Learning Theory on the Traditional Teacher Centered Teaching Model" that classical learning theories (i.e. behaviorism and cognitive theory) have a significant impact on traditional teaching models. In classical learning theory, he particularly emphasized that Ausubel's "learning and teaching" theory was still the main theoretical support. In addition, initially, due to factors such as a lack of theoretical knowledge and non-standard motor skills, students quickly lost interest in learning and gradually formed a resistance to practice. In modern competitive volleyball, the competition between attack and defense is one of the biggest highlights of the entire game, but

behind this exciting attack and defense, there are countless boring technical exercises. In volleyball teaching, each of the five basic skills of passing, padding, dunking, serving, and blocking must be practiced multiple times after learning the movement structure in order to proficiently apply a basic technique. Students' ball sense also needs to be strengthened through continuous practice. Shi Hongyu (2018) proposed that the main role in the teaching process was the teacher. Under the guidance of the teacher, learning was carried out, allowing students to avoid detours and accelerate the learning process. At the same time, they also paid attention to the connection and combination of new and old knowledge and skills, which was economical and timely. Focusing on teachers enabled students to easily and directly acquire knowledge and skills from teachers, which was also an experience that educators extracted from teaching. It was indispensable in the field of physical education teaching and has matured. Therefore, we cannot easily replace the reform of teaching methods with some new teaching methods. What is more important is to absorb the essence of traditional teaching methods and innovate and improve them.

The teaching method was important for volleyball technique. Simpson Instructional Model proposed by Simpson was practical skill that could be developed through practice, it would lead to accuracy, agility, expertise, and durability. Guo Ping (2015) pointed out the Simpson Instructional Model could greatly promote the development and practice of physical education teaching. It was of great significance for enriching and developing sports teaching evaluation theory, establishing the position of sports education evaluation in various aspects of sports teaching, and promoting sports teaching reform and development. Simpson Instructional Model could stimulate students' thirst for knowledge, provide them with a satisfactory and enjoyable learning experience, and enhance their confidence in physical education learning, truly reflect their subjectivity in physical education teaching. Attempting to combine traditional teaching with the Simpson Instructional Model also avoided the monotonous practice of volleyball classes in physical education majors, which helped teachers stimulate the classroom atmosphere and helped students better immerse themselves in the classroom. To improve teaching effectiveness, Simpson Instructional Model complied with the current policy requirements of classroom reform in universities and provide assistance for improving the quality and effectiveness of volleyball compulsory courses. Sun Wenqi (2020) pointed out that college volleyball class could bring many influences, including skill learning, physical quality, tactical awareness, learning attitude and team cooperation. Here's a breakdown of those effects: 1) the influence of skill learning, 2) the impact of physical fitness, 3) the impact of tactical awareness, 4) the influence of learning attitude, and 5) the impact of teamwork. These influences will help students to better master volleyball skills and enjoy the fun brought by volleyball. In addition, Wu Ping (2020) pointed out that Simpson Instructional Model placed students at the center of learning and encouraged students to explore, reflect on themselves and manage themselves. This transformation not only improved students' learning enthusiasm, but also cultivated their independent learning ability, critical

thinking and problem-solving ability, and laid a solid foundation for students' lifelong learning. Jiao Siyu (2022) proposed that the Simpson Instructional Model could greatly promote the development and practice of physical education teaching objective evaluation theory, thereby achieving the goal of promoting teaching reform and improving teaching quality. From the perspective of classifying sports action skills, examining and studying teaching evaluation provided new ideas for theoretical research and practical operation of school sports teaching evaluation.

In summary, this research based on the Simpson Instructional Model can systematically improve students' volleyball skills in stages, since perception, preparation to guided response, to complex explicit behavior and adaptation, ensure that students grasp a solid skill base in the process of gradual progress, and cultivate their ability of independent learning and team cooperation, which is conducive to the volleyball skills development of students.

Research Objective

1. To use Simpson Instructional Model to improve volleyball skill of undergraduate students.

2. To compare students' volleyball skill before and after the implementation based on Simpson Instructional Model.

Research Hypotheses

After implementing by using Simpson Instructional Model, the students' volleyball skill was improved obviously.

Literature review

This research was to use Simpson Instructional Model to improve achievement of basic volleyball skill course of undergraduate students. The researcher has reviewed the literature and proposed related theories and research as follows:

The significance of Simpson Instructional Model

The importance of Simpson Instructional Model in teacher training has been emphasized by many scholars and educators.

Wu Ping (2020) pointed out that Simpson Instructional Model placed students at the center of learning and encouraged students to explore, reflect on themselves and manage themselves. This transformation not only improved students' learning enthusiasm, but also cultivated their independent learning ability, critical thinking and problem-solving ability, and laid a solid foundation for students' lifelong learning. 1) The stimulation of intrinsic motivation. Simpson model stimulated students' intrinsic learning motivation by making them clear about their learning goals and expected results. When students realized that they were active participants in the learning process rather than passive recipients, they would become more engaged in the learning activities and develop a greater interest in what they were learning. 2) The accumulation of sense of accomplishment. By achieving small goals in stages, students were able to

increase their self-confidence in the process of gaining a continuous sense of accomplishment, thereby maintaining a continuous passion for learning. Every progress and success were an affirmation of their efforts and further stimulated their enthusiasm for learning.

Sun Wenqi (2020) pointed out that Simpson Instructional Model respected individual differences and implemented adaptive teaching. Teachers adjusted the content, method and pace of instruction according to the specific situation of students, ensured that each student could effectively learn at a pace that suited them. This personalized teaching method helped to discover students' specialty and promoted students' all-round development and personal growth. 1) Deeply identify individual differences. Simpson Instructional Model adopted diversified assessment means, not only paid attention to students' academic performance, but also attached importance to their interest, ability, learning attitude and other aspects of performance. Through continuous observation, recording and communication, teachers could fully and accurately identify the individual differences of each student, and establish a personalized learning file for each student to record their learning process, achievements, challenges and growth trajectory. 2) Customization of adaptive teaching content. Teachers designed differentiated course content according to students' learning abilities and interests. For students with weak foundation, teachers provided necessary supplementary materials and guidance; For students who had the ability to learn, teachers would provide further development of learning opportunities. When teaching the same skill or knowledge point, the difficulty and depth of the teaching content could be flexibly adjusted according to the learning progress and understanding ability of the students, so as to ensure that each student could be challenged and improved at their own level.

To sum up, the main significance of Simpson Instructional Model is that it can stimulate students' inner motivation, promote the refined, practical and personalized development of skills, and enhance the interaction and cooperation of teaching to provide strong support for students' all-round development.

The elements of Simpson Instructional Model

Simpson Instructional Model is a step-by-step method designed to guide students from perception to creation through a series of carefully designed steps to fully grasp knowledge and develop their thinking skills. Simpson Instructional Model includes the following components:

Huang Xinyun (2015) pointed out that the steps of Simpson Instructional Model included: Step 1: Perception, the student's primary task was initial exposure and perception of the learning material or situation. Step 2: Preparation, after the perception, the students entered the preparation stage. The goal of this stage was to activate students' prior knowledge, establish connections between old and new knowledge, and prepare them psychologically and intellectually for the upcoming learning activities. Step 3: Guided response, students engaged in a series of specific and limited activities to explore and practice new knowledge. Step 4: Mechanism, the internal logic and mechanism of the learning content were deeply analyzed to help students understand

the principles and laws behind the knowledge and form a systematic knowledge structure. Step 5: Complex response, on the basis of mastering basic knowledge and skills, students were required to face more complex and challenging learning tasks, which could be completed independently or cooperatively to demonstrate their learning results. Step 6: Adaptation, students needed to constantly adjust their learning strategies and methods based on feedback and evaluation results during the learning process to adapt to the changing learning environment and task requirements. And step 7: Creation, students were able to integrate their knowledge, innovate and create, and generate new ideas, works or solutions.

Shi Hongyu (2018) paid attention to the important aspects of Simpson Instructional Model: Step 1: Awareness, the primary task of students was to embark on a journey of exploration. Through various senses such as vision, hearing and touch, students could initially contact and perceive the learning materials or situations. Step 2: Preparation, students entered the preparation stage, students' existing knowledge system, build a bridge between old and new knowledge, build a solid psychological and knowledge foundation for subsequent learning, and ensure that students were in the best state to welcome the learning of new knowledge. Step 3: Instructed reaction, students actively participated in a series of carefully designed and targeted learning activities. Through hands-on operation, thinking and discussion. Step 4: Understanding the fundamentals, focused on in-depth analysis of the essence and core of learning content and revealed the logical chain and operating mechanism behind knowledge. Through case analysis, explanation and other methods, students could build a systematic knowledge framework and deepen their understanding of the inherent laws of knowledge. Step 5: Complex reaction, on the basis of mastering basic knowledge and skills, students would face the challenges on higher level learning. Step 6: Adjustment, during the learning process, students should constantly review their progress and effectiveness based on feedback and evaluation results. And step 7: Innovation, students in this stage would be able to integrate what they had learned, dare to explore unknown areas, and carry out creative thinking and practice. They might come up with new ideas, design original works, develop innovative solutions, etc.

Hu Haiying (2019) mentioned that the seven important aspects of Simpson Instructional Model were interrelated, which together constituted a complete teaching system. These seven areas were as follows: Step 1: Cognizance, create an engaging learning environment and use a variety of media and teaching methods to stimulate students' learning interest and curiosity. Step 2: Preparation, students review prior knowledge related to the current learning content by asking questions, discussing or reviewing old knowledge. Step 3: Managed response, design a series of targeted exercises, experiments or activities to allow students to experience the application of new knowledge in practice. Step 4: Mechanism, using explanations, demonstrations, discussions and other ways to deeply analyze the internal structure and operation mechanism of learning contents. Step 5: Complex reaction, design a series of comprehensive learning tasks or projects, require students to use their knowledge to

solve practical problems or complete specific tasks. These tasks might involve knowledge and skills in multiple subject areas. Step 6: Adaptive adjustment, pay attention to students' learning progress and performance and offer timely feedback and guidance. And step 7: Creation, encourage students to use their imagination and creativity, apply what they had learned to new situations or problems, and create new works or solutions with uniqueness and value.

Ma Yingyi (2020) stated that Simpson Instructional Model was a teaching method aimed at training teachers to practice and reflect on their teaching skills by simulating a real class environment. Step 1: Perception, build an attractive learning sailing station, use rich multimedia resources and innovative teaching methods, and ignite students' curiosity and desire to explore the unknown world. Step 2: Readiness, used question guidance, thinking collision or knowledge context sorting to help students consolidate the previous knowledge closely linked to the content of the new lesson. Step 3: Directed response, designed a series of practical activities, so that students could operate, experience, and feel the practical application of new knowledge. Step 4: In-depth understanding, adopted multi-dimensional teaching strategies, such as in-depth explanation, case analysis, rule summary and model construction, to lead students to dig deeper into the essence and internal logic of the learning content. Step 5: Comprehensive response, designed a series of interdisciplinary and comprehensive learning tasks or projects, required students to flexibly use their knowledge to solve complex problems or complete specific tasks. Step 6: Comprehensive adaptation, the navigators of students' learning journey and paid close attention to each student's growth trajectory and learning effectiveness. And step 7: Invention, stimulated students' infinite creativity and potential, encouraged them to integrate what they had learned into novel situations or problems, and created unique works or solutions with practical application value.

Zhang Ruifei (2022) stated that Simpson Instructional Model was a kind of teaching method for the purpose of teacher training, which was usually used to cultivate and improve teachers' teaching skills. Step 1: Perception, the learning process, which involved receiving and processing external information through their senses from students. Step 2: Preparation, transition from old knowledge to new knowledge. It emphasized the activation of students' existing knowledge system and provided the necessary background and support for the learning of new knowledge. Step 3: Instructed reaction, students began to move from passively receiving information to actively participating in the learning process. Step 4: Mechanism, the mechanism stage in-depth analysis of the internal logic and principles of learning content, helped students understand the deep relationship behind knowledge. Step 5: Complex response, students applied their knowledge to more complex and challenging tasks and demonstrated their learning results through practice. Step 6: Adaptation, students to constantly adjust learning strategies and methods based on feedback and evaluation results during the learning process. It was a dynamic, ongoing process designed. And

step 7: Creative, students' comprehensive ability, and also the concentrated embodiment of their innovative spirit and creativity.

The Influence of Simpson Instructional model on volleyball skill was mainly reflected in the aspects of skill decomposition and refinement, improvement of learning effect, timely feedback and adjustment, and establishment of correct technical action concept. These influences were helpful for students to better master and use volleyball skills and improve their volleyball level. The researcher studied the documents and related research about Simpson Instructional Model from many researchers and synthesized 7 steps to develop lesson plans: Step 1 Perception, Step 2 Preparation, Step 3 Guided response, Step 4 Mechanism, Step 5 Complex response, Step 6 Adaptation, and Step 7 Creation.

The volleyball skill course

This article focused on volleyball serving skill, volleyball spiking skill and volleyball blocking skill. Through explaining the content of these three dimensions, the influence of Simpson Instructional Model on volleyball technical ability is analyzed.

Volleyball serving is a very important technique, which directly affects the outcome of the whole game. Therefore, in the preparation stage, teachers should carefully analyze the purpose, significance and tactical requirements of the game, and do a good job in serving skills training and psychological preparation.

Volleyball spiking is a skill that requires teamwork. The success of spiking is inseparable from the tacit cooperation between passing and passing. The initiator of the spike needs to accurately judge the position and quality of the pass, while the target receiver of the spike needs to accurately understand and grasp the intention and strength of the spike. Through spiking training and competition, teamwork ability and tacit understanding can be enhanced.

Volleyball blocking is one of the most important defensive methods in volleyball match. An accurate and powerful block can effectively block the opponent's attack and reduce the opponent's chances of scoring. The accuracy and height of blocking directly affect the bounce and path of the ball and determine whether the ball can be stopped successfully.

Research Methodology

The Population

There were 60 freshmen students, majoring in Physical Education with 2 classes from Chongqing Vocational College of Media, Chongqing city, China, in the second semester of the academic year 2023. (There was mixing capacity in each class: high level, medium level and low level.)

The Sample groups

Through a random cluster sampling method, there were 30 freshmen students, majoring in Physical Education with 1 class from Chongqing Vocational College of Media, Chongqing city, China, in the second semester of the academic year 2023.

Research Instrument

Using Simpson Instructional Model to enhance volleyball skill of undergraduate students. The research instruments are as follows:

1. Lesson plan based on Simpson Instructional Model

1.1 Create 3 lesson plans on the subject, volleyball serving skill (9 hours), volleyball spiking skill (9 hours) and volleyball blocking skill (9 hours), total 27 hours. Each lesson plan includes the following aspects: 1) Content, 2) Objective of Learning, 3) Main point/Concept, 4) Introduction, 5) Learning content, 6) Learning activities, 7) Measurement and Evaluation, and 7) Teaching media.

1.2 Specialize in the proposal on Volleyball Course to serve as a guideline for developing the lesson plan in this research and study guidelines for teaching based on Simpson Instructional Model from many academics: Huang Xinyun (2015), Shi Hongyu (2018), Hu Haiying (2019), Ma Yingyi (2020). By using the Simpson Instructional Model theory, each lesson plan specified the details of the topics as follows: 1) Perception, 2) Preparation, 3) Guided response, 4) Mechanism, 5) Complex response, 6) Adaptation, and 7) Creation.

1.3 The finished lesson plan was submitted to the thesis advisor to verify the suitability and consistency of the content. Then improve the teaching effect according to the suggestion. After revising lesson plans, the researcher took them to 3 experts to detect the accuracy of the content and completeness of the lesson plan and calculate the Index of Item Objective Congruence (IOC). The result of lesson plan had an IOC=1.00 for all contents.

2. Achievement of Volleyball Course test

The Volleyball Course by using the Simpson Instructional Model improve volleyball skill of undergraduate students: 1) volleyball serving skill; 2) volleyball spiking skill; and 3) volleyball blocking skill. The steps in creating and determining the quality of achievement test are as follows:

2.1 Multiple-choice

2.1.1 Studied the theory about how to create multiple choice questions test and created multiple choice questions test for 3 lesson plans about the basic knowledge of each content were 1) volleyball serving skill; 2) volleyball spiking skill; and 3) volleyball blocking skill were totally 23 items to measure the achievement of volleyball skill. The scoring criteria 1 point for correct answer and 0 point for wrong answer. Take the test to 3 experts for measurement and evaluation. Check the content validity and analyze the Index of Item Objective Congruence (IOC) = 1.00 for all questions.

2.1.2 Improve and revise items test that have been verified by experts, and take it to try out with students who were not a sample group for 30 freshmen students, majoring in Physical Education to calculate the quality of the test: difficulty value (p), discrimination power (r) and reliability by Kuder Richardson's method (KR-20). The results of the quality analysis of the questions found that there were 23 questions: 1) Volleyball serving skill, there were 8 questions (p=0.47-0.77, r=0.20-0.53), 2) Volleyball spiking skill, there were 8 questions (p=0.53-0.80, r=0.20-0.47), and 3)

Volleyball blocking skill, there were 7 questions (p= 0.47-0.73, r= 0.20-0.27). And reliability (KR-20) at 0.72.

2.2 Volleyball skill performance assessment

The Measures for the Examination and Verification of the performance, which included 3 elements and 13 elements. The specific steps for the creation and quality determination are as follows:

2.2.1 Content analysis, competence and learning objectives consistent with the lesson plan on 1) Volleyball serving skill: float serving, topspin serving, jump serving, jump float serving, and friction serving. 2) Volleyball spiking skill: before spiking, ready to take off, preparing posture, take-off in situ, take-off from back to front, take-off in the air, and 3) Volleyball blocking skill: from the flying direction of the ball, from the time of blocking, from the perspective of blocking, from the coordination of blocking action.

2.2.2 Learned the theories, principles and methods of performance appraisal from literature, teaching materials and related research.

2.2.3 Determine scoring criteria for performance assessment by authentic assessments (holistic rubric) rating on 3 scales. Update and improve the performance assessment that has been verified by experts and analyze the Index of Item Objective Congruence (IOC) = 1.00 for all questions. Then take it to try out with students who were not a sample group for 30 freshmen students and calculated the quality of confidence values in performance assessment by analysis the reliability by Cronbach's Coefficient Alpha method at 0.75.

Data Collection

This research was experimental research according to One Group Pretest Posttest Design, the data collection is as follows:

1. Organize a test prior to the start of the experiment to learn how students learn to evaluate student role learning objectives and the benefits of participating in competency tests and learning activities during the experiment.

2. Test before teaching (Pretest) with 30 freshmen students, which was a sample group, and checked the score record to analyze the data.

3. The course is divided into 3 units, total 27 hours and teaching in July 2024, it's not counting the days of pretest and posttest.

Research Results

The purpose of the research was 1) to use Simpson Instructional Model to improve volleyball skill of undergraduate students and 2) to compare students' volleyball skill before and after the implementation based on Simpson Instructional Model. The researcher presented the research results as follow:

1. Using the Simpson Instructional Model to improve volleyball skill of undergraduate students. The researcher has studied the documents and research related on Simpson Instructional Model and synthesized into 7 steps: 1) Perception, 2) Preparation, 3) Guided response, 4) Mechanism, 5) Complex response, 6) Adaptation, and 7) Creation. The data analysis was assessment of the quality of the lesson plan by 3 experts, and the results are shown the quality of the lesson plan by experts overall, the suitability of the research objectives has the most suitable. After 30 students have learned according to the lesson plans, students' achievement of the volleyball skill score between before and after learning, the average score before learning was 28.70, the average score after learning was 48.97.

2. The comparison of students' volleyball skill score before and after learning by using Simpson Instructional Model to analyze the data using average statistics, standard deviation, and T-test for dependent samples which the data analysis results are shown in Table 1.

Table 1 The comparison of students' volleyball skill score before and after the learning by using Simpson Instructional Model

Volleyball skill	Testing	n	Full score	$\bar{X}$	SD	df	t	p
Serving skill	pretest	30	23	10.93	2.49	29	23.80**	.00
	posttest	30	23	17.87	1.63			
Spiking skill	pretest	30	26	12.50	1.85	29	37.87**	.00
	posttest	30	26	20.70	1.56			
Blocking skill	pretest	30	13	5.27	1.14	29	23.51**	.00
	posttest	30	13	10.40	1.04			
Total	pretest	30	62	28.70	4.18	29	35.36**	.00
	posttest	30	62	48.97	3.35			

**p<.01

From Table 1, the comparison of students' volleyball skill score before and after learning by using Simpson Instructional Model. The result found that volleyball skill score of students after learning higher than before learning statistically significant at the level .01. When considering the results of data analysis classified by content: serving skill, spiking skill, and blocking skill. The result found that volleyball skill score of students after learning higher than before learning statistically significant at the level .01 for all contents. Therefore, learning by using Simpson Instructional Model could improve students' volleyball skill.

Research Discussion

The research resulted on using Simpson Instructional Model to improve volleyball skill course on 30 freshmen from Chongqing Vocational College of Media, China. The researcher could be discussed the volleyball skill as follows:

1. Using the Simpson Instructional Model to improve volleyball skill of undergraduate students. The researcher studied documents and related research on Simpson Instructional Model theory from many researchers and synthesized into 7 steps used for 3 lesson plans. The result showed that the quality of the lesson plans by experts was the most suitable. After students had learned the volleyball skill according to the 3 lesson plans, the average score was 48.97 after learning. which was higher than the average score was 28.70 before learning. It's because Simpson Instructional Model emphasized the importance of practice in motor skill learning. In volleyball technical training, a large number of mechanical exercises and practical operation were essential. Through continuous practice, students could consolidate the techniques they had learned and improve the accuracy and proficiency of their movements. At the same time, teachers needed to give timely feedback to students, point out the shortcomings of technical movements, and provide suggestions for improvement. This combination

of practice and feedback helped students to quickly correct mistakes and accelerate the process of skills improvement (Cheng Huo, 2022). Consistent with Chen Bingdong (2020), Simpson Instructional Model emphasized the cultivation of adaptability and creativity in the advanced stage. In the teaching of volleyball technology, this meant encouraging students not only to be satisfied with mastering basic movement skills, but also to be able to flexibly use these skills in the game, to react quickly according to the situation of the opponent and changes on the court. In addition, teachers should also stimulate students' creativity and encourage them to try new tactics and combinations in the competition to achieve better results. This teaching method helped to cultivate students' independent thinking ability and innovation ability, so that they could reach a higher level in volleyball technology. According to the research of Wang Chuanwen (2018), in order to prepare for the regional championship, a high school volleyball team adopted Simpson Instructional Model to carry out a one-month special technical improvement training for the players. According to Simpson's motor skill target classification, a set of systematic training plan was designed to comprehensively improve the volleyball skill level of the players. Training process: Awareness and Preparation (Weeks 1-2): The coach first through video analysis and explanation, let the players understand the basic principle of volleyball technology, movement structure and key points. The introduction of simple technical imitation exercises, such as the basic hand shape and stance of serving and cushion, cultivated the players' initial perception ability. Guided reaction and mechanical exercise phases (Weeks 3-4): The coach offered one-on-one or group guidance to correct the mistakes of the players in the technical movements and ensure that each player could correctly master the basic techniques. The feedback mechanism was introduced in the process of practice. After each practice, the coach and the players evaluated each other and pointed out the improvement direction. This hierarchical training mode helped players to gradually master volleyball skills and gradually improve from basic to advanced. Moreover, Xu Mengjiao (2024) applied the Simpson Instructional Model in university PE. The research objects of the experimental group were 30 students and control group were 30 students. Personalized instruction: Simpson teaching model encouraged coaches to give personalized instruction according to the actual situation of the players to solve their specific problems in technical learning. This teaching method was helpful to give full play to the potential of each team member and improve the overall training effect. The research result proved that Simpson Instructional Model focused on cultivating team members' initiative and creativity, encouraging them to try new techniques and tactics. This teaching method helped to cultivate the independent thinking ability and innovation ability of the players, which laid a foundation for them to achieve excellent results in the competition.

2. The comparison of students' volleyball skill before and after the implementation based on Simpson Instructional Model. The result found that volleyball skill score of students after learning higher than before learning statistically significant at the level .01. When considering the results of data analysis classified by content:

serving skill, spiking skill, and blocking skill. The result found that volleyball skill score of students after learning higher than before learning statistically significant at the level .01 for all contents. Therefore, learning by using Simpson Instructional Model could improve students' volleyball skill. It's because Simpson Instructional Model had obvious advantages in volleyball technology improvement, such as clear classification of teaching objectives, the combination of practice and feedback, and stimulated students' initiative and creativity. These advantages helped students to achieve a more comprehensive and in-depth development in volleyball technology. According to the research of Zhou Yufeng (2014) made an experiment on the improvement of spiking skill in the process of applying Simpson Instructional Model. Experimental group: 35 students with similar volleyball foundation were selected to use Simpson Instructional Model for spiking skill training. Control group: Another 35 students with similar volleyball fundamentals were selected to receive spike training by using traditional teaching methods. According to Simpson Instructional Model, spike skill was trained in stages, from basic hand shape and pace exercises to complex jump and spike movements in tandem. After the training, the students' spiking skill was evaluated again and compared with the pre-test data. The result showed that spiking skill was improved remarkable in the process of applying Simpson Instructional Model. Consistent with research of Zhao Meixia (2016) applied Simpson Instructional Model on volleyball serving technique. Experimental group: 30 students with similar volleyball foundation were selected and trained with Simpson Instructional Model. Control group: Another 30 students with similar volleyball foundation were selected for serving technique training using traditional teaching methods. After the training, the two groups of students were tested again on the service technique, and the same index was recorded and compared with the pre-test data. Volleyball serving skill was improved simply. And consistent with research by Tian Yonggang (2021) made an experiment, and applied Simpson Instructional Model to blocking skill. Experimental group: 30 students with similar volleyball foundation were selected to conduct blocking technique training by using Simpson Instructional Model. Control group: Another 30 students with similar volleyball foundation were selected for blocking technique training by using traditional teaching methods. The teacher evaluated students' blocking techniques, including jump timing, blocking hand type, air judgment and body control. Experimental group: According to Simpson Instructional Model, block technique training was carried out in stages, from basic take-off and landing techniques to complex aerial judgment and coordinated defensive strategies. Control group: Traditional teaching methods were adopted, such as coach demonstration, student imitation, blocking practice in simulated game scenarios. After the training, re-evaluate the students' blocking techniques and compare them with the pre-test data. Simpson Instructional Model had many advantages in improving college students' basketball technical ability, which could help students better grasp and understand basketball technical movements, improve learning effect and learning interest. The research made by Liao Xibi (2022) stated an empirical study on the effect of Simpson Instructional Model on swimming skill learning. By

comparing the performance of the experimental group and the control group in the learning process of swimming skills, this study explored the influence of Simpson Instructional Model on the improvement of swimming skills. The experiment period was four weeks, and the research objects were beginners and swimmers with a certain foundation. Experimental design: Experimental group: 20 beginners and 10 swimmers with a certain foundation were selected and trained by Simpson Instructional Model. This model emphasized phased learning and feedback mechanisms. Control group: Another 20 beginners and 10 swimmers with a certain foundation were selected and trained by traditional teaching methods. Before the experiment, the basic swimming skills of the two groups of participants were evaluated, including the mastery of basic swimming strokes such as freestyle and breaststroke. The experimental group was trained in stages according to Simpson Instructional Model, three times a week for 90 minutes each time. The control group was trained according to traditional teaching methods, with the same frequency and duration as the experimental group. After the experiment, the two groups of participants were tested for swimming skills to evaluate the improvement of their skills. Simpson Instructional Model can effectively improve the skill level of swimming participants through phased and targeted training methods. For swimming teaching, this model was a teaching method worth popularizing and applying.

In summary, the Simpson Instructional Model can effectively improve the skill level of various sports through the step-by-step and targeted training method. This teaching method is beneficial to let each player in the team play their best and improve the overall training effect. In addition, cultivating the initiative and creativity of team members, encouraging them to try new techniques and strategies, increase players' independent thinking, after the implementation of Simpson Instructional Model, students' volleyball skill improved remarkably.

Research Suggestion

General suggestion

1. Teachers should keep a keen observation, catch the highlights and shortcomings of students' technical movements, and immediately give preliminary guidance or tips, so that they can adjust in time in the next practice and avoid forming bad habits.

2. After students have just completed an action or set of exercises, their muscle memory and mental state are at their most active stage. Therefore, teachers should be giving feedback at this time, students are able to remember the coach's instructions more clearly and adjust quickly in the following exercises and should be strengthened for students with slow progress, and more difficult exercises should be introduced for students with better mastery.

3. Teachers should be conducting regular technical assessment, the details of the students' technical movements, the quality of completion and the speed of progress were recorded by means of the combination of quantitative scoring and qualitative observation.

Suggestions for further research

1. Integrating Simpson Instructional Model with other teaching methods, which is very important in the process of responding and adapting to the complex teaching model for students.

2. Comparing the results of using Simpson Instructional Model between the experimental group and the control group to develop volleyball skills of students.

3. Studying the management model of volleyball competition by using Simpson Instructional Model.

References

Chen Bingdong. (2020). Discussion on Influencing Factors and Relevant Countermeasures of Volleyball Service Technique. *Quality and Market 2*(03),67-69.

Chen Feng. (2018). A Study on Sports Injuries and Social Determinants. *Journal of the Taiwan Medical Association, 10* (01), 767-772.

Cheng Huo. (2022). Analysis on the Training and Improvement of Volleyball Service Technique. Sporting and Technology 3(05), 44-46.

Duan Huixiong. (2019). Actual Combat Training of Volleyball Blocking Technique. *Scientific Advice (Education and Research)* (11),25.

Gao Zejin. (2017). Experimental Research on the Application of Simpson Instructional Model in Volleyball Frontal Two-handed Cushion Technique Teaching. *Journal of Beijing Sport University, 2017*(3), 69-81.

General Administration of Sport of China. (2023). *National Fitness Plan*, (2), 2-11.

Guo Ping. (2015). The Teaching of Sports Movement Skills in Colleges and Universities. *Higher Education,* (3), 99-101.

Hao Shifeng. (2019). Exploring the Application of Competition Teaching Method in Volleyball Class in Universities, *Contemporary Sports Science and Technology,* (07), 23-25.

Hu Haiying. (2019). Progress in Research on Motor Skill Learning. *Social Sciences,* (3), 88-90.

Huang Xinyun. (2015). The Application of Simpson Instructional Method in Volleyball General Course of Physical Education. *Fujian Normal University Press.*

Jiao Siyu. (2022). *The Not Equal Level Man Volleyball Athlete in Colleges and Universities in Stu Jump Blocking Technique Lower Limb Biomechanical Characteristics of the Comparative Analysis.* Inner Mongolia Normal University Press.

Liu Jian. (2009). The Impact of Classical Learning Theory on the Traditional Teaching Model of "Teacher centered". *Journal of Hunan Medical University,* (4), 187-190.

Liu Yanchen & Li Peng. (2024). Using Multimedia Technology to Improve the Teaching Effectiveness of Volleyball Spiking Technology. *Shanxi Education (Teaching) 4*(02), 93-94.

Lu Yanqi. (2019). Emphasis on the Standardization of Movement Skills in Physical Education Teaching. *Sports Storm,* (03), 68-72.

Ma Yingyi. (2020). Research on the Influence of Sports Action Skill. *Social Science,* (05), 128-130.

Mao Zhenming. (2015). *Physical Education Teaching Theory*. Higher Education Press.

Shi Hongyu. (2018). Experimental Research on Simpson Instructional Model in Volleyball Teaching of Guangzhou Sport University. *Journal of Guangzhou Sport University Press*.

Simpson, E. J. (1972). *Taxonomy of Educational Objectives*. University of Minnesota Press.

Sun Wenqi. (2020). The Application Effect of Simpson Instructional Model in the Teaching of Physical Education Elective Courses in Vocational Colleges. Taking Volleyball Elective Teaching as an Example. *Fujian Sports Science and Technology, 32*(02), 53-55.

Tang Yunqi. (2013). A Brief Discussion on the Teaching and Training Methods of Volleyball Spike Technique. *Science Tribune (in the ten-day)* (14), 141-189.

The Ministry of Education of the People's Republic of China. (2023). *Guidelines for Physical Education Courses at Colleges and Universities in China.*

Tian Yonggang. (2021). Discussion on Influencing Factors of Volleyball Spike Technique. *Sporting Goods and Technology 5*(09), 27-28.

Wang Chuanwen. (2018). Volleyball Service Receiving Technique Training. *Contemporary Sports Science and Technology, 4*(23), 12-14.

Wu Ping. (2020). The Influence of the Types of Action Demonstration in Physical Education Teaching on Students' Action Skills and Cognitive Understanding. *Sports Fashion, 10*(02), 46-48.

Wu Zhizheng. (2022). *Mobile Block Movement Kinematics Analysis of Young Volleyball Players*. Tianjin Sports College Press.

Xu Mengjiao. (2024). *Collaborative optimization study of space and time on Men's Volleyball Jump Serving Technology*. Qufu Normal University Press.

Xu Wenchao & Cheng Yu. (2018). Development of Volleyball Service Technique and Teaching and Training Methods. *Comparative Research on Cultural Innovation, 5*(32),183-185.

Yang Siyuan. (2021). Exploration and Practical Application of Ideological and Political Elements in Volleyball Curriculum. *Contemporary Sports Science and Technology 11*(28), 80-93.

Yu Yang. (2014). Teaching Skills of Volleyball Spike Technique. *Chinese School Physical Education* (02),52-53.

Zhai Xinxin. (2017). Application of Receiving Technique in Volleyball Match. *Sports* (14), 26.

Zhang Ruifei. (2022). *Experimental Research on Simpson Instructional Model in the Teaching of Volleyball General Course*. Beijing Sport University Press.

Zhao Meixia. (2016). Analysis and Research on Volleyball Spike Technology. *Modernization of Education, 3*(21),155-157.

Zhao Yang. (2017). Video Image Correction Simulation of Volleyball Serving Technique Path. *Computer Simulation, 4*(11), 240-243.

Zhou Yufeng. (2014). Analysis on Volleyball Spike Technique. *Journal of Mudanjiang University of Education,* (08),123-124.

Zhou Yufeng. (2017). Research on the Training of Blocking Technique in Volleyball Match. *Journal of Jiamusi Vocational College,* (08), 399.

Zhou Yunfeng. (2021). Discussion on Spiking Technique and Blocking Technique of College Volleyball Players. *The Road to Success,* (33), 123-125.

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